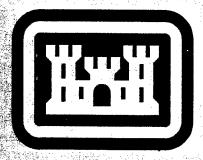
(EEAP) BOILER AND CHILLER STUDY II

AT

FORT SAM HOUSTON
SAN ANTONIO, TEXAS
VOLUME II

PRE-FINAL



REPORT

US ARMY CORPS
OF ENGINEERS

Fort Worth Division

9971023 103

Approved for patient relation Distribution Universed

CONDUCTED BY:

HUITT ZOLLARS, INC.

CONSULTING ENGINEERS
FORT WORTH, TEXAS
10/31/96

DEPARTMENT OF THE ARMY

CONSTRUCTION ENGINEERING RESEARCH LABORATORIES, CORPS OF ENGINEERS
P.O. BOX 9005
CHAMPAIGN, ILLINOIS 61826-9005

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APPENDIX H COMPUTER MODELING OF BOILER & CHILLER SYSTEMS

- A. General Parameters. The following assumptions and estimates were used in the modeling of the existing buildings which are served by the boilers and chillers included in this study.
 - 1. The Trace 600 weather data for San Antonio, Texas was used in all of the computer simulations.
 - 2. The Trace 600 computer simulations were performed for the months of January through December to determine annual HVAC equipment energy consumptions.
 - 3. A special holiday schedule was created to incorporate the additional holidays that military personnel living in the area 1300 barracks buildings receive. This schedule includes the seven standard holidays plus the period from December 17 through 31. The standard seven day holiday schedule was used for all other areas.
 - 4. All building dimensions and construction data were determined from as-built drawings when available, or from field measurements taken during the site visit.
 - 5. Design room temperatures for comfort conditions (thermostat setpoints) were obtained from CEMP-E (9 December 1991) Chapter 13, Section 3. These temperatures were 78°F, 50% relative humidity for cooling and 70°F for heating. No cooling or heating temperature setback control was included in the simulations. The design room conditions for the hospital were determined as follows:

Surgery / Critical Care	68 °F, 55%
Ancillary	72 °F, 50%
Nursing / Patient Care	76 °F, 50%
Computer Room	72 °F, 50%

- 6. The shading coefficient for all windows with interior shading devices was estimated at 0.67 per ASHRAE data.
- 7. The number of people in each building or room was estimated from interviews with post personnel or field notes taken during the site visit. The sensible and latent heat gain rates used for the people in each room were taken from ASHRAE data.
- 8. Building and room lighting loads were obtained from as-built drawings when available, or from field notes taken during the site visit. A diversity factor of 85% was utilized for lighting to estimate the energy consumption throughout the year.
- 9. Building and room miscellaneous equipment loads were estimated from field notes taken during the site visit. These loads represent the internal heat gains generated from equipment in the rooms, such as computers, televisions, cooking equipment, etc. Heat gain data for the various types of internal loads was taken from ASHRAE. A diversity factor of 50% was utilized for all miscellaneous loads to estimate the energy consumption throughout the year.
- 10. For all building with forced ventilation requirements, the ventilation rates used in the models were taken from the greater of the following:
 - a. ASHRAE Standard 62-1989

- b. Schedule data on the existing AHUs, FCUs, etc... (if available)
- Building 2288 was not modeled because it has been abandoned and committed to Congress for disposal at the time of the site visit.
- 12. Diversity factors for both internal power (50%) and lighting (85%) was used to estimate the energy consumption of both types of equipment.
- 13. In buildings where the plans did not show any insulation, 1" fibrous insulation was assumed.
- B. People, Lights and Miscellaneous Equipment Schedules. The following assumptions and estimates were used in the modeling of the existing buildings which are served by the boilers and chillers included in this study.
 - 1. Offices: During the weekdays, all people, lights and miscellaneous equipment were scheduled at 100% from 8 am until 12 pm, and from 1 pm until 5 pm. During the lunch hour, from 12 pm until 1 pm, all internal loads were scheduled at 10%. On the weekends and holidays, all loads were scheduled at 0%.

Barracks:

- a. People During the weekdays, all people were scheduled at 0% between 8 am and 5 pm. Between 5 pm and 10 pm, they were scheduled at 80%, and between 10 pm and 8 am, they were scheduled at 100%. During the weekends and holidays, the people were scheduled at 50% all day long.
- b. Lights and Miscellaneous Equipment During the weekdays, the lights and miscellaneous equipment (TVS, radios, etc.) were scheduled at 5% between 8 am and 5 pm. Between 5 pm and 10 pm, they were scheduled at 80%, and between 10 pm and 8 am, they were scheduled at 5%. During the weekends and holidays, the lights and miscellaneous equipment were scheduled at 50% from 8 am until 10 pm, and 5% from 10 pm until 8 am.

3. Dining Areas:

- a. People During the weekdays, weekends and holidays, all people were scheduled at 100% between 6 am and 9 am, between 11 am and 2 pm, and between 5 pm and 7 pm. They were scheduled at 0% at all other times.
- b. Lights and Miscellaneous Equipment During the weekdays, weekends and holidays, all lights and miscellaneous equipment were scheduled at 100% between 5 am and 7 pm. They were scheduled at 0% at all other times.
- 4. Kitchen Areas: During the weekdays, weekends and holidays, all people, lights and miscellaneous equipment were scheduled at 100% from 4 am until 9 pm. They were scheduled at 0% at all other times.
- 5. Hospital: People, lights, and miscellaneous equipment were scheduled 100% for 24 hours/day, 365 days/year.

6. Chapels:

- a. People: On Sunday, all people were scheduled at 80% from 9 A.M. to 12 P.M. During the weekdays, all people were scheduled at 15% from 7 P.M. to 8 P.M. They were scheduled at 0% at all other times.
- b. Lights, and Miscellaneous equipment: On Sunday, all lights and miscellaneous equipment were scheduled at 100% from 9 A.M. to 12 P.M. and from 7 P.M. to 8 P.M. during the weekdays. They were scheduled 0% at all other times.

7. Theaters:

- a. People: All people were scheduled at 75% from 7 P.M. to 9 P.M. on Saturday. During the weekdays, all people were scheduled at 25% from 8 A.M. to 10 A.M. They were scheduled at 0% at all other times.
- b. Lights, and Miscellaneous equipment: All lights and miscellaneous equipment were scheduled at 100% from 7 P.M. to 9 P.M. on Saturdays and from 8 A.M. to 10 A.M. on the weekdays. They were scheduled 0% at all other times.

8. Grocery/Retail Areas:

- a. People: During the weekdays, all people were scheduled at 10% from 11 A.M. to 5 P.M. and 100 % from 5 P.M. to 8 P.M. On the weekends, all people were scheduled at 50% from 11 A.M. to 8 P.M. They were scheduled at 0% at all other times.
- b. Lights, and Miscellaneous equipment: During weekdays and weekends, all lights and miscellaneous equipment were scheduled at 100% from 11 A.M. to 8 P.M. They were scheduled 0% at all other times.

9. Museum:

- a. People: During the weekdays, all people were scheduled at 45% from 10 A.M. to 4 P.M. On the weekends, all people were scheduled at 100% from 10 A.M. to 4 P.M. They were scheduled at 0% at all other times.
- b. Lights, and Miscellaneous equipment: During weekdays and weekends, all lights and miscellaneous equipment were scheduled at 100% from 10 A.M. to 4 P.M. They were scheduled 0% at all other times.

10. Medical Library / Emergency Transport Area:

- a. People: During the weekdays and weekends, all people were scheduled at 100% from 7 A.M. to 5 P.M., 60% from 5 P.M. to 11 P.M., and 15% from 11 P.M. to 7 A.M.
- b. Lights, and Miscellaneous equipment: All lights and miscellaneous equipment were scheduled at 100% for 24 hours/day, 365 days/year.

11. Classrooms:

- a. People: During the weekdays, all people were scheduled at 100% from 8 A.M. to 10 A.M., and 50% from 1 P.M. to 2 P.M. They were scheduled at 0% at all other times.
- b. Lights, and Miscellaneous equipment: During the weekdays, all lighting and miscellaneous equipment were scheduled at 100% from 8 A.M. to 10 A.M., and from 1 P.M. to 2 P.M. They were scheduled 0% at all other times.

12. Lounge Areas:

- a. People: During the weekdays, all people were scheduled at 15% from 7 P.M. to 9 P.M. On the weekends, all people were scheduled at 75% from 7 P.M. to 12 A.M. They were scheduled at 0% at all other times.
- b. Lights, and miscellaneous equipment: During the weekdays, all lights and miscellaneous equipment were scheduled at 100% from 7 P.M. to 9 P.M. On the weekends, all lights and miscellaneous equipment were scheduled at 100% from 7 P.M. to 12 A.M. They were scheduled at 0% at all other times.
- C. HVAC Equipment Schedules. The following assumptions and estimates were used in the modeling of the existing buildings which are served by the boilers and chillers included in this study.
 - 1. All fan coil and air handler fans were scheduled to operate 100% of the day, 12 months of the year, as required by room thermostats to maintain building setpoint temperatures.
 - 2. All fan coil and air handler cooling coils not serving areas that require year round cooling were scheduled to operate 100% of the day, from May through October, as required by room thermostats to maintain building setpoint temperatures.
 - 3. All fan coil and air handler heating coils not serving areas that require year round heating were scheduled to operate 100% of the day, from November through April, as required by room thermostats to maintain building setpoint temperatures.
 - 4. All building infiltration and ventilation air is scheduled to be introduced into the buildings at a fixed rate 100% of the day, 12 months per year.
 - 5. All building and room thermostats were scheduled to maintain the design setpoints 24 hours per day, 12 months per year with no setback periods.
- D. Building HVAC Systems. The following assumptions and estimates were used in the modeling of the existing buildings which are served by the boilers and chillers included in this study.
 - 1. HVAC air system types were taken from building as-built drawings when available, or from field notes taken during the site visit.
 - 2. In order to simplify the calculations, most buildings were modeled as a single 'zone' served by a single HVAC air system. Other buildings with more diverse occupancies were zoned as shown on as-built drawings or according to function and served by individual HVAC air systems in order to generate a more realistic load profile for the boilers and chillers.

- 3. The proposed building HVAC air system was assumed to have a chilled water coil for cooling and a heating water coil for heating. These coils were assumed to be served by two-pipe or four-pipe distribution systems within the buildings depending on the seasonal operation of the chillers & boilers.
- 4. All fan motors were assumed to be 100% loaded with no power factor or efficiency adjustment.
- 5. For all fans where the motor size was not available, the fan energy consumption was estimated at 0.000746 KW/CFM.
- 6. One of the potential ECO's studied was to repair or retrofit the existing controls for the air systems. To simplify the analysis, there were five control strategies that were chosen in the model. The following are a list of the five air system control strategies:
 - a. Economizer: When the ambient temperature falls below 65°F, the O.A., return, and exhaust dampers are modulated between 100% OA intake and the minimum required for IAQ standards to maintain a mixed air temperature set-point.
 - b. Setback: When the occupancy of the area being served by the air system falls below 5%, the heating and cooling space temperature set-point is setback. For the cooling mode, the setpoint falls back to 90°, and in the heating set-point, the temperature is setback to 65°F.
 - c. Hot deck reset: the HW coil is modulated to maintain a leaving air temperature setpoint that varies between 70°F and 110°F according to the outdoor ambient temperature.
 - d. Cold deck reset: the CHW coil is modulated to maintain a leaving air temperature setpoint that varies between 53°F and 60°F according to the outdoor ambient temperature.
 - e. Optimum Start/Stop: the air system fan is energized at a certain time before occupancy which is calculated by multiplying the number of minutes required to change the space temperature one degree by the number of degrees away from the space temperature set-point.
- E. Boiler & Chiller Systems. The following assumptions and estimates were used in the modeling of the boiler and chiller systems included in this study.
 - 1. Boiler and chiller systems types, full load capacity, and energy consumption were identified during the field inspection and used in the computer simulations for modeling the existing equipment. The Trace 600 models were used for part load performance of these boilers and chillers.
 - 2. It was assumed that all existing chillers had a full load KW/ton increase of 1% over their original rating for each year of service up to ten years. For all service over ten years, 0.25% per year was added to the full load KW/ton rating. This was done to account for natural efficiency losses due to tube fouling and compressor wear.
 - 3. It was assumed that all existing boilers had a full load efficiency decrease of 1% under their original rating for each year of service up to ten years. For all service over ten years, 0.25%

- per year was deducted from the full load efficiency rating. This was done to account for natural efficiency losses due to tube fouling and burner wear.
- 4. All pump motors were assumed to be 100% loaded with no power factor or efficiency adjustment
- 5. Pumping horsepower for all associated pumps was estimated for all proposed boilers and chillers and input to simulate the new systems.
- 6. Existing cooling tower systems were identified during the field inspection and used in the computer simulations for the existing equipment. The existing towers were also used for the proposed equipment wherever possible. Their fan horsepower was also input to simulate the existing towers.
- 7. In all areas, a base load was added to the existing and proposed chillers and boilers to account for heat loss or gain from circulating pumps and piping insulation. These base loads increased the required capacity of the boilers and chillers and show up as 'base utility' in the equipment energy consumption output sheets.
- 8. In buildings where existing heating equipment information was unavailable, a heating load of 0.009 MBH/sq ft was estimated with a 50% safety factor added to determine the size of the equipment.
- 9. The age of the equipment, if not available, was estimated from field notes taken during the site visit.
- 10. If existing chiller information was not available, it was assumed that all chillers were selected at 105°F ambient temperature with a 44°F CHW supply temperature.
- 11. Building 1001 is served from the chiller in building 1002 which was not included in the Scope of Work. Therefore, a "substitute" chiller with the same full load efficiency as the chiller serving both buildings 1001 and 1002 was used to serve just building 1001. The percentage that this "substitute" chiller was loaded was estimated from the percentage that the actual chiller is loaded. This estimation was calculated by assuming 650 sq ft/ton for building 1002 and adding that to the computer simulated load for building 1001.
- 12. Proposed boiler and chiller alternatives were selected for comparison in the computer simulations. Full load capacity and energy consumption rates were obtained from manufacturer's data and input into the computer simulations. When available, part load energy consumption data from the manufactures was used in the simulations.
- 13. All proposed chillers were selected from the top 25% of their class in terms of efficiency (KW/ton), and also were at least 10% more efficient than current design standards.
- 14. In addition to the air system control packages, the proposed boiler and chiller equipment was also modeled with control strategies where applicable. The following are a list of the water system control strategies used in the model:
 - a. Sequencing: In areas where more than one chiller was selected to handle the load, chiller sequencing was modeled to obtain the optimum efficiency at all part load conditions. This also required selecting the chillers to operate at the best efficiency points at the greatest percentage of time.

- b. CHW/HW reset: The chilled/heating water supply temperature was reset according to the part load ratio of the chiller/boiler. At 80% part load, the chilled/heating water supply temperature was reset to 2°F above/below design temperature. At 40% part load, the chilled/heating water temperature was reset to a maximum value of 4°F above/below design temperature.
- c. CND reset: The condenser water supply temperature was reset according to ambient air temperatures. In supplying CND water lower than 85°F, this decreases the pressure differential between the evaporator and condenser which results in the compressor doing less work.

01 Card - Job Information -----

Project: 030185.06 EEAP BOILER-CHILLER STUDY

Location: FT. SAM HOUSTON, TEXAS

Client: CORPS. OF ENGINEERS - FORT WORTH, TX.

Program User: HUITT-ZOLLARS INC.

Comments: AREA 100

Card 08-			Clim	atic Infor	mation			
	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
SANANTON	•							

Card 11----- Energy Simulation Parameters ------Building 1st Month Last Month Level Energy Energy Of Holiday Calendar Floor Simulation Simulation Calculation Code Code Area ZONE

----- Load Section Alternative #1 -----

Card 19- Load Alternative -

Number Description

EXISTING BUILDINGS

Card 20)			Genera	l Room	Paramete	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Туре	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 122	113	113	3	3	2.54	11			
6	6	BLDG 140	50	26	3	5	2.54	15			
10	10	BLDG 124	113	113	3	3	2.54	11			
15	15	BLDG 128	119	119	3	8	2.54	18			
20	20	BLDG 133	100	96	3	8	2.54	18			
25	25	BLDG 134	102	102	3	3	2.54	12			
30	30	BLDG 143	122	122	3	3	2.54	12			
35	35	BLDG 144	122	122	3	3	2.54	12			
40	40	BLDG 145	122	122	3	3	2.54	12			

Card 20				Genera	1 Room	Paramete	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
45	45	BLDG 146	122	122	3	3	2.54	12			
50	50	BLDG 147	122	122	3	3	2.54	12			
55	55	BLDG 149	122	122	3	3	2.54	12			
60	60	BLDG 197	122	122	3	3	2.54	12			
65	65	BLDG 198	68	68	3	5	2.54	14			
70	70	BLDG 199	80	80	3	2	2.54	12			
75	75	BLDG 125	50	26	3	5	2.54	15			
80	80	BLDG 127	50	26	3	5	2.54	15			
85	85	BLDG 135	50	26	3	5	2.54	15			
90	90	BLDG 250-1	142	34	3	2	2.54	10.5			
95	95	BLDG 250-2	195	195	3	2	2.54	10.5			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70		ROOM	LIGHT30	NO
6	78	50	78		70	70		ROOM	LIGHT30	YES
10	78	50	78		70	70		ROOM	LIGHT30	NO
15	.78	50	78		70	70		ROOM	LIGHT30	NO
20	78	50	78		70	70		ROOM	LIGHT30	NO
25	78	50	78		70	70		ROOM	LIGHT30	NO
30	78	50	78		70	70		ROOM	LIGHT30	NO
35	78	50	78		70	70		ROOM	LIGHT30	NO
40	78	50	78		70	70		ROOM	LIGHT30	NO
45	78	50	78		70	70		ROOM	LIGHT30	NO
50	78	50	78		70	70		ROOM	LIGHT30	NO
55	78	50	78		70	70		ROOM	LIGHT30	NO
60	78	50	78		70	70		ROOM	LIGHT30	NO
65	78	50	78		70	70		ROOM	LIGHT30	NO
70	78	50	78		70	70		ROOM	LIGHT30	NO
75	78	50	78		70	70		ROOM	LIGHT30	NO
80	78	50	78		70	70		ROOM	LIGHT30	ио
85	78	50	78		70	70		ROOM	LIGHT30	NO
90	78	50	78		70	70		ROOM	LIGHT30	NO
95	78	50	78		70	70		ROOM	LIGHT30	NO

Card 22				Root Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha
5	1	NO	180	30	.08	37	0	60	
6	1	YES			0.08	40		60	

Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
10	1	NO	180	30	.08	37	0	60	
15	1	YES			.08	37	0	60	
20	1	YES			.08	37	0	60	
25	1	NO	73	74	.05	40	0	45	
30	1	NO	146	28	.05	40	0	80	
35	1	NO	146	28	.05	40	0	80	
40	1	NO	146	28	.05	40	0	80	
45	1	NO	146	28	.05	40	0	80	
50	1	NO	146	28	.05	40	0	80	
55	1	NO	146	28	.05	40	0	80	
60	1	NO	146	28	.05	40	0	80	
65	1	NO	39	39	.08	37	0	60	
70	1	NO	56	57	.05	37	0	60	
75	1	YES			.08	37	0	60	
80	1	YES			.08	37	0	60	
85	1	YES			.08	37	0	60	
90	1	YES			.06	23	0	90	
95	1	NO	113	113	.06	23	0	90	

Card 24	Wall	Parameters	

					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
5	1	360	11	.17	58	330			
5	2	60	11	.17	58	60			
5	3	360	11	.17	58	150			
5	4	60	11	.17	58	240			
6	1	50	15	0.17	64	315			
6	2	26	15	0.17	64	45			
6	3	50	15	0.17	64	135			
6	4	26	15	0.17	64	225			
10	1	360	11	.17	58	315			
10	2	60	11	.17	58	45			
10	3	360	11	.17	58	135			
10	4	60	11	.17	58	225			
15	1	100	18	.10	58	315			
15	2	96	18	.10	58	45			
15	3	100	18	.10	52	135			
15	4	96	18	.10	58	225			
20	1	100	18	.10	58	330			
20	2	96	18	.10	58	60			
20	3	100	18	.10	52	150			
20	4	96	18	.10	58	240			
25	1	280	12	.11	88	315			
25	2	60	12	.11	88	45			

Card 24				Wall F					
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc		Wall	Wall	Reflectance
Number	Number	_	Height	U-Value		Direction	Tilt	Alpha	Multiplier
25	3	280	12	.11	88	135			
25	4	60	12	.11	88	225			
30	1	292	12	.10	58	0			
30	2	56	12	.10	58	90			
30	3	292	12	.10	58	180			
30	4	56	12	.10	58	270			
35	1	292	12	.10	58	0			
35	2	56	12	.10	58	90			
35	3	292	12	.10	58	180			
35	4	56	12	.10	58	270			
40	1	292	12	.10	58	0			
40	2	56	12	.10	58	90			
40	3	292	12	.10	58	180			
40	4	56	12	.10	58	270			
45	1	292	12	.10	58	0			
45	2	56	12	.10	58	90			
45	3	292	12	.10	58	180			
45	4	56	12	.10	58	270			
50	1	292	12	.10	58	90			
50	2	56	12	.10	58	180			
50	3	292	12	.10	58	270			
50	4	56	12	.10	58	0			
55	1	292	12	.10	58	90			
55	2	56	12	.10	58	180			
55	3	292	12	.10	58	270			
55	4	56	12	.10	58	0			
60	1	292	12	.10	58	320			
60	2	56	12	.10	58	50			
60	3	292	12	.10	58	140			
60	4	56	12	.10	58	230			
65	1	27.5	14	.12	74	0			
65	2	59	14	.12	74	90			
65	3	27.5	14	.12	74	180			
65	4	59	14	.12	74	270			
70	1	126	12	.12	74	315			
70	2	31	12	.12	74	45			
70	3	126	12	.12	74	135			
70	4	31	12	.12	74	225			
75	1	50	15	.17	58	315			
75	2	26	15	.17	58	45			
75	3	50	15	.17	58	135			
75	4	26	15	.17	58	225			
80	1	50	15	.17	58	315			
80	2	26	15	.17	58	45			
80	3	50	15	.17	58	135			
80	4	26	15	.17	58	225			
85	1	50	15	.17	58	315			

Card 24				Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
85	2	26	15	.17	58	45			_
85	3	50	15	.17	58	135			
85	4	26	15	.17	58	225			
90	1	142	10.5	.12	74	0			
90	2	58	10.5	.12	74	90			
90	3	52	10.5	.12	74	180			
90	4	58	10.5	.12	74	270			
95	1	20	10.5	.12	74	0			
95	2	798	10.5	.12	74	90			
95	3	60	10.5	.12	74	180			
95	4	798	10.5	.12	74	270			

_				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of		Shading	Shading	Shading	Solar to	Visible	Visible
Number		Length	Width	Windows	U-Value	Coefficient	Туре	Type	Ret. Air	Transmittance	Reflectanc
5	1	5	3	34	1.1	.67					
5	2	5	3	6	1.1	.67					
5	3	5	3	34	1.1	.67	3				
5	4	5	3	6	1.1	.67					
5	1	8	3	4	0.73	0.67					
5	2	8	3	4	0.73	0.67					
5	3	8	3	4	0.73	0.67					
5	4	8	3	2	0.73	0.67					
10	1	5	3	34	1.1	.67					
.0	2	5	3	6	1.1	.67					
.0	3	5	3	34	1.1	.67	3				
.0	4	5	3	6	1.1	.67					
.5	1	7	3	8	1.1	.67	3				
.5	2	7	3	7	1.1	.67					
.5	3	7	3	9	1.1	.67					
15	4	7	3	7	1.1	.67					
0	1	7	3	8	1.1	.67	3				
.0	2	7	3	7	1.1	.67					
0	3	7	3	9	1.1	.67					
0	4	7	3	7	1.1	.67					
5	1	6	3	26	.8	.67					
:5	2	6	3	5	.8	.67					
5	3			29	.53	1					
5	4	6	3	5	.8	.67					
0	1	7	3.5	21	1.1	.67	3				
0	2	7	3.5	6	1.1	.67					
0	3			35	1.1	.67	3				
0	4	7	3.5	6	1.1	.67					
5	1	7	3.5	21	1.1	.67	3				

				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance
35	2	7	3.5	6	1.1	.67					
35	3			35	1.1	.67	3				
35	4	7	3.5	6	1.1	.67					
40	1	7	3.5	21	1.1	.67	3				
40	2	7	3.5	6	1.1	.67					
40	3			35	1.1	.67	3				
40	4	7	3.5	6	1.1	.67					
45	1	7	3.5	21	1.1	.67	3				
45	2	7	3.5	6	1.1	.67					
45	3			35	1.1	.67	3				
45	4	7	3.5	6	1.1	.67					
50	1	7	3.5	21	1.1	.67	3				
50	2	7	3.5	6	1.1	.67					
50	3			35	1.1	.67	3				
50	4	7	3.5	6	1.1	.67					
55	1	7	3.5	21	1.1	.67	3				
55	2	7	3.5	6	1.1	.67					
55	3			35	1.1	.67	3				
55	4	7	3.5	6	1.1	.67					
60	1	7	3.5	21	1.1	.67	3				
60	2	7	3.5	6	1.1	.67					
60	3			35	1.1	.67	3				
60	4	7	3.5	6	1.1	.67					
65	1	5	3	6	1.1	.67					
65	2	5	3	11	1.1	.67	3				
65	3	5	3	6	1.1	.67	_				
65	4	5	3	11	1.1	.67	3				
70	1	5	3	10	1.1	.67	3				
70	2	5	3	2	1.1	.67					
70	3	5 5	3	10 2	1.1	.67					
70 75	4	8	3 3	4	1.1	.67					
75 75	1 2	8	3	2	.73 .73	.67 .67					
75 75	3	8	3	4	.73	.67					
75 75	4	8	3	2	.73	.67					
80	1	8	3	4	.73	.67					
80	2	8	3	2	.73	.67					
80	3	8	3	4	.73	.67					
80	4	8	3	2	.73	.67					
85	1	8	3	4	.73	.67					
85	2	8	3	2	.73	.67					
85	3	8	3	4	.73	.67					
85	4	8	3	2	.73	.67					
90	1	4	2	3	1.1	1					
90	3	7	5	3	1.1	1					
90	4	7	5	3	1.1	1					
95	2	4	2	114	1.1	.67					

Card 25	;				W	Wall/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Type	Ret. Air	Transmittance	Reflectance
95	3	4	2	6	1.1	.67					
95	4	4	2	114	1.1	.67					

Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHOFFIC	FSHOFFIC								
6	FSHOFFIC	FSHOFFIC								
10	FSHOFFIC	FSHOFFIC								
15	FSHOFFIC	FSHOFFIC								
20	FSHOFFIC	FSHOFFIC								
25	FSHOFFIC	FSHOFFIC								
30	FSHOFFIC	FSHOFFIC								
35	FSHOFFIC	FSHOFFIC								
40	FSHOFFIC	FSHOFFIC								
45	FSHOFFIC	FSHOFFIC								
50	FSHBARRP	FSHBARRL								
55	FSHBARRP	FSHBARRL								
60	FSHOFFIC	FSHOFFIC								
65	FSHOFFIC	FSHOFFIC								
70	FSHOFFIC	FSHOFFIC								,
75	FSHOFFIC	FSHOFFIC								
80	FSHOFFIC	FSHOFFIC								
85	FSHOFFIC	FSHOFFIC								
90	FSHOFFIC	FSHOFFIC								
95	FSHBARRP	FSHBARRL								

Card 27	'				Peopl	e and Ligh	its				
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
5	60	PEOPLE	250	200	2	WATT-SF	ASHRAE2				
6	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
10	60	PEOPLE	250	200	2	WATT-SF	ASHRAE2				
15	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
20	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
25	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
30	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
35	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
40	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
45	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
50	45	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
55	45	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				

Card 27					Peopl	e and Ligh	ts				
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
60	250	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
65	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
70	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
75	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
80	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
85	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
90	160	SF-PERS	250	200	2	WATT-SF	INCAND				
95	160	SF-PERS	250	200	1.5	WATT-SF	INCAND				

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
6	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
10	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
15	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
20	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
25	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
30	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
35	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
40	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
45	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
50	1	T.VETC.	1	WATT-SF	FSHBARRL	NONE					
55	1	T.VETC.	1	WATT-SF	FSHBARRL	NONE					
60	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
65	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
70	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
75	1	COMPUTER	2	WATT-SF	FSHOFFIC	NONE					
80	1	COMPUTER	2	WATT-SF	FSHOFFIC	NONE					
85	1	COMPUTER	2	WATT-SF	FSHOFFIC	NONE					
90	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
95	1	COMPUTER	1	WATT-SF	FSHBARRL	NONE					

Card 29)				Room Air	lows				
		Ventil	lation			Infilt	tration			
Room	Cool	ing	Heat	ing	Coo	ling	Неа	ting	Reheat	Minimum
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
5	20	CFM-P	20	CFM-P						
6	20	CFM-P	20	CFM-P						
10	20	CFM-P	20	CFM-P						
15	20	CFM-P	20	CFM-P						
20	20	CFM-P	20	CFM-P						

Card 29	ard 29Ventilation					ows				
		Ventila	ation			Infilt	ration			
Room	Coolir	ng	Heatir	ıg	Cooli	ng	Heat	ing	Reheat M	inimum
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
25	20	CFM-P	20	CFM-P						
30	20	CFM-P	20	CFM-P						
35	20	CFM-P	20	CFM-P						
40	20	CFM-P	20	CFM-P						
45	20	CFM-P	20	CFM-P						
50	15	CFM-P	15	CFM-P						
55	15	CFM-P	15	CFM-P						
60	20	CFM-P	20	CFM-P						
65	20	CFM-P	20	CFM-P						
70	20	CFM-P	20	CFM-P						
75	20	CFM-P	20	CFM-P						
80	20	CFM-P	20	CFM-P						
85	20	CFM-P	20	CFM-P						
90	20	CFM-P	20	CFM-P						
95	20	CFM-P	20	CFM-P						

Card 32				Exposed Flo	or Parame	ters				
	Exposed	Slab-				E	xposed Flo	or		
Room	Floor	Perimeter	Loss	Floor	Floor	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Coefficient	Area	U-Value	Type	Flag	Temp	Temp	Room No
5	1			5400	.19	119	HRLYOADB			
10	1			5400	.19	119	HRLYOADB			
15	1			14224	.19	119	HRLYOADB			
20	1			9600	.19	119	HRLYOADB			
50	1			5400	.19	119	HRLYOADB			
55	1			5400	.19	119	HRLYOADB			
70	1			3906	.25	119	HRLYOADB			

Card 33-	Card 33 External Shading									
OVERHANG										
		Height				Left		Right	Adjacent	
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building	
Type	Height	Glass	Out	Width	Left	Out	Right	Out	Flag	
3	5	2	8							

----- System Section Alternative #1 -----

Card 39- System Alternative Number Description

1 AREA 100 EXISTING SYSTEMS

Card 40----- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----

System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	MZ						
2	SZ						
3	MZ						
4	MZ						
5	MZ						
6	MZ						
7	MZ						
8	MZ						
9	PTAC						
10	SZ						
11	MZ						
12	MZ						
13	SZ						
14	SZ						
15	MZ						
16	FC						
17	SZ						
18	sz						
19	MZ						
20	MZ						

Card 41					Zone A	ssignmer	t					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	5										
2	6	6										
3	10	10										
4	15	15										
5	20	20										
6	25	25										
7	30	30										
8	35	35										
9	40	40										
10	45	45										
11	50	50										
12	55	55										
13	60	60										
14	65	65										
15	70	70										
16	75	75										
17	80	80										
18	85	85										
19	90	90										

Card 41					Zone A	ssignment						
System												
Set Ref #1		Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6	
Number Begin End		Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	
20	95	95										

Card 42				Fan	SP an	d Duct P	arameters					
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return	
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air	
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path	
1	1											
2	1											
3	1											
4	2.3											
5	2.3											
6	1.5											
7	1.4											
8	1.4											
9	.5											
10	1.4											
11	1.4											
12	1.4											
13	1.4											
14	1.5											
15	1.5											
16	1											
17	1											
18	1											
19	2.5											
20	2.5											

Card 45 Equipment Schedules												
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary		
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating		
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil		
1	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
2	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
3	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
4	OFF					OFF	OFF	OFF				
5	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
6	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
7	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
8	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
9	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
11	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				
12	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG				

system	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
13	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
L 4	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
L5	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
.6	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
١7	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
1.8	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
19	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
		Equipn	ment Section	Alternat	tive #1					
			Eq	uipment De	tive #1					
Card 59	Ele	c Consump I	Eç Glec Demand	uipment De Demand					Demar	d Limit
Card 59	Ele tive Tim	c Consump E	lec Demand	uipment De Demand Limit		' TOD Sched	ules		Demar	

Card	60	-,					Cooling	Load Assign	ment				
Load	All Coil	Cooling											
Asgn	Loads To	Equipment	-Grou	p 1-	-Grou	p 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Ref	Cool Ref	Sizing	Begin	End	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	BLKPLANT	1	2									
2	2	BLKPLANT	3	3	16	16							
3	3	BLKPLANT	4	4									
4	4	BLKPLANT	5	5									
5	5	BLKPLANT	6	6	18	18							
6	6	BLKPLANT	7	7									
7	7	BLKPLANT	8	8									
8	9	BLKPLANT	9	9									
9	10	BLKPLANT	10	10									
10	11	BLKPLANT	11	12									
11	12	BLKPLANT	13	13									
12	13	BLKPLANT	14	14									
13	14	BLKPLANT	15	15									
14	15	BLKPLANT	17	17									
15	16	BLKPLANT	19	20									

Card	62				Co	oling Equi	ameters						
Cool	Equip	Num		C00I	LING			HEAT 1	RECOVERY		Seq		Demand
Ref	Code	Of	Capa	city	Energy		Capa	city	Ene:	rgy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
1	ACC2	1	40	TONS	70.4	KM							

Cool	Equip	Num		C00	LING			HEAT R	ECOVERY		Seq		Demand
Ref	Code	Of	Capa	city	Ene	rgy	Capa	city	Ene	rgy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
2	ACC2	1	50	TONS	88	KW							
3	ACC2	1	40	TONS	70.4	KW							
4	ACC1	1	25	TONS	44	KW							
5	ACC1	1	30	TONS	52.8	KW			•				
6	ACC2	1	45	TONS	79.2	KW							
7	ACC1	1	4	TONS	5.81	KW					1	PAR	
8	ACC2	1	45	TONS	79.2	KW					2	PAR	
9	EQ1307	1	46	TONS	55.0	KW							
10	ACC1	1	40	TONS	70.4	KW							
11	ACC2	1	50	TONS	88	KW							
12	ACC2	1	50	TONS	88	KW							
13	EQ1113	1	10	TONS	14.4	KW							
14	ACC1	1	15	TONS	26.4	KW							
15	EQ1161	1	4.5	TONS	7.0	KW							
16	ACC2	1	100	TONS	176	KW							

Card	1 63			Cooling Pu	mps and Ref	erences				
Coo]	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
1	2.24	KW					•			3
2	2.24	KW								· 5
3	1.12	KW								
4	1.12	KW								
5	.37	KW								
6	2.24	KW								
7	2.24	KW								
8	2.24	KW								
10	1.12	KW								
11	3.73	KW								
12	1.49	KW								
13	1.12	KW								
14	1.49	KW								
16	5.6	KW								

Card 65				Heating	Load Assign	ment				
Load	All Coil									
Assignment	Loads To	-Group 1	Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin En	d Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1 2								
2	2	3 3								

Card 65														
Load	All Coil													
Assignment	Loads To	-Grou	p 1-	-Grou	p 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-		
Reference	Heating Ref	Begin	End	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End		
3	3	4	4											
4	4	5	5											
5	5	6	6	18	18									
6	6	7	7											
7	7	8	8											
8	8	9	9											
9	9	10	10											
10	10	11	11											
11	11	12	12											
12	12	13	13											
13	13	14	14											
14	14	15	15											
15	15	17	17											
16	16	19	20											

Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1	1.12	KW	618	MBH	850	MBH				2		
2	BOILERWT	1	1.12	KW	618	MBH	850	MBH				4		
3	BOILERWT	1	0.37	KW	109	MBH	150	MBH						
4	BOILERWT	1	.37	KW	109	MBH	150	MBH				1		
5	BOILERWT	1	.37	KW	596	MBH	820	MBH						
6	BOILERWT	1	.75	KW	596	MBH	820	MBH						
7	BOILERWT	1	.75	KW	596	MBH	820	MBH						
8	EQ2263	1			515.2	MBH	53.59	KW						
9	BOILERWT	1	.75	KW	596	MBH	820	MBH						
10	BOILERWT	1	. 75	KW	596	MBH	820	MBH						
11	BOILERWT	1	.75	KW	596	MBH	820	MBH						
12	BOILERWT	1	.75	KW	1273	MBH	1750	MBH						
13	BOILERWT	1	.56	KW	327	MBH	450	MBH						
14	BOILERWT	1	1.12	KW	145	MBH	200	MBH						
15	EQ2454	1			33	MBH	45	MBH						
16	STEAMBLR	1			727	MBH	1000	MBH	1					

Card 69 Fan Equipment Parameters													
	System												
	Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional					
	Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation					
	1	TYPFAN											
	2	TYPFAN											
	3	TYPFAN											

Card 69			Fan Equipm	ent Parame	eters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						
10	TYPFAN						
11	TYPFAN						
12	TYPFAN						
13	TYPFAN						
14	TYPFAN						
15	TYPFAN						
16	TYPFAN						
17	TYPFAN						
18	TYPFAN						
19	TYPFAN						
20	TYPFAN						

System Cool Heat Ret Exh Aux Room Opt Cool Heat Aux Exh Vent Number KW KW KW KW KW KW KW Fan Fan	Card 70				Fan	Equip	ment K	V Over	rides				
Set Fan Fan Fan Sup Exh Vent Cool Heat Aux Exh Vent Number KW KW KW KW KW KW Fan		1	'a nian	YSTEM-		OTH	ER SYS	rem	D	EMAND	LIMIT	PRIORI	TY
Number KW KW KW KW KW KW Fan	System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
1 8.2 2 0.7 3 8.2 5 7.5 6 8.2 11 7.5 12 7.5 13 6.7 17 2.2 19 5.6	Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
2 0.7 3 8.2 5 7.5 6 8.2 11 7.5 12 7.5 13 6.7 17 2.2 19 5.6	Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
3 8.2 5 7.5 6 8.2 11 7.5 12 7.5 13 6.7 17 2.2 19 5.6	1	8.2											
5 7.5 6 8.2 11 7.5 12 7.5 13 6.7 17 2.2 19 5.6	2	0.7											
6 8.2 11 7.5 12 7.5 13 6.7 17 2.2 19 5.6	3	8.2											
11 7.5 12 7.5 13 6.7 17 2.2 19 5.6	5	7.5											
12 7.5 13 6.7 17 2.2 19 5.6	6	8.2											
13 6.7 17 2.2 19 5.6	11	7.5											
17 2.2 19 5.6	12	7.5											
19 5.6	13	6.7											
	17	2.2											
20 34.0	19	5.6											
	20	34.0											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Туре	Number	Number	Temp	Temp
1	PIPE-PUMP HT LOS	1.27	TONS	FTSAMCLG	CHILL-LD	1			
2	PIPE HT LOS	7.35	MBH	FTSAMHTG	HOT-LD	1			
3	PIPE-PUMP HT LOS	1.32	TONS	FTSAMCLG	CHILL-LD	2			
4	PIPE HT LOSS	7.36	MBH	FTSAMHTG	U.I-TOH	2			

Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
5	PIPE-PUMP HT LOS	0.0	TONS	FTSAMCLG	CHILL-LD	3			
6	PIPE HT LOSS	0.0	MBH	FTSAMHTG	HOT-LD	3			
7	PIPE-PUMP HT LOS	.83	TONS	FTSAMCLG	CHILL-LD	4			
8	PIPE HT LOSS	6.05	MBH	FTSAMHTG	HOT-LD	4			
9	PIPE-PUMP HT LOS	0.89	TONS	FTSAMCLG	CHILL-LD	5			
10	PIPE HT LOSS	4.5	MBH	FTSAMHTG	HOT-LD	5			
11	PIPE-PUMP HT LOS	1.3	TONS	FTSAMCLG	CHILL-LD	6			
12	PIPE HT LOS	6.1	MBH	FTSAMHTG	HOT-LD	6			
13	PIPE-PUMP HT LOS	1.3	TONS	FTSAMCLG	CHILL-LD	8			
14	PIPE HT LOSS	6.1	MBH	FTSAMHTG	HOT-LD	7			
15	COMPR HEAT	1.39	TONS	FTSAMCLG	CHILL-LD	9			
16	REFRIG. HT LOSS	7.1	MBH	FTSAMHTG	HOT-LD	8			
17	PIPE-PUMP HT LOS	0.98	TONS	FTSAMCLG	CHILL-LD	10			
18	PIPE HT LOSS	6.1	MBH	FTSAMHTG	HOT-LD	9			
19	PIPE-PUMP HT LOS	1.98	TONS	FTSAMCLG	CHILL-LD	11			
20	PIPE HT LOSS	5.0	MBH	FTSAMHTG	HOT-LD	10			
21	PIPE HT LOSS	5.0	MBH	FTSAMHTG	HOT-LD	11			
22	PIPE-PUMP HT LOS	1.04	TONS	FTSAMCLG	CHILL-LD	12			
23	PIPE HT LOSS	5.45	MBH	FTSAMHTG	HOT-LD	12			
24	PIPE-PUMP HT LOS	.53	TONS	FTSAMCLG	CHILL-LD	13			
25	PIPE HT LOSS	1.95	MBH	FTSAMHTG	HOT-LD	13			
26	PIPE-PUMP HT LOS	0.72	TONS	FTSAMCLG	CHILL-LD	14			
27	PIPE HT LOSS	3.55	MBH	FTSAMHTG	HOT-LD	14			
28	PIPE HT LOSS	.11	TONS	FTSAMCLG	CHILL-LD	15			
29	PIPE HT LOSS	0.85	MBH	FTSAMHTG	HOT-LD	15			
30	PIPE-PUMP HT LOS	3	TONS	FTSAMCLG	CHILL-LD	16			
31	PIPE HT LOSS	12.32	MBH	FTSAMHTG	HOT-LD	16			

Card 7	4	· 		Condenser	/ Coolin	g Tower	Parameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
1	EQ5100			1.49	KW	T-WATER	CTOWER	1			

Card	75				Misc	ellaneous A	ccessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
1	EQ5240	3.73	KW									
2	EQ5020	2.2	KW									
3	EQ5001	2.24	KW									
4	EQ5020	2.2	KW									
5	EQ5001	2.24	KW									

01 Card - Job Information

Project: 030185.06 EEAP BOILER-CHILLER STUDY

Location: FT. SAM HOUSTON, TEXAS

Client: CORPS. OF ENGINEERS - FORT WORTH, TX.

Program User: HUITT-ZOLLARS INC.

Comments: AREA 100

Card 08----- Climatic Information -----

Summer Winter Summer Summer Winter Summer Winter Weather Clearness Clearness Design Design Design Building Ground Ground Code Number Dry Bulb Wet Bulb Dry Bulb Orientation Reflect Reflect

SANANTON

Card 11----- Energy Simulation Parameters -----

1st Month Last Month Level

Building

Energy Energy Of Holiday Calendar Floor

Simulation Simulation Calculation Code Code Area

ZONE

----- Load Section Alternative #1 -----

Card 19- Load Alternative -

Number

Description

EXISTING BUILDINGS

Card 20				Gener	al Room	Paramete	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
100	100	BLDG. 142	65	65	3	2	2.54	10			
105	105	BLDG. 123	72	72	3	10	2.54	24			
110	110	BLDG. 126	94.5	94.5	3	2	2.54	12			
115	115	BLDG. 131	94.5	94.5	3	2	2.54	12			
125	125	BLDG. 129	97	97	3	3	2.54	12			
130	130	BLDG. 151	40	40.5	3	1	2.54	11			
135	135	BLDG. 154	40	40.5	3	1	2.54	11			
140	140	BLDG. 156	40	40.5	3	1	2.54	11			
145	145	BLDG. 157	40	40.5	3	1	2.54	11			

Card 20)			Genera	al Room	Paramete	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
150	150	BLDG. 159	40	40.5	3	1	2.54	11			
155	155	BLDG. 152 ADMIN	44.5	44.5	3	2.5	2.54	15			
160	160	BLDG. 152 CLASS	46	46	3	2.5	2.54	15			
165	165	BLDG. 155	90.5	91	3	2.5	2.54	15			
170	170	BLDG. 158	64	64	3	2.5	2.54	15			
175	175	BLDG. 141	31.2	32	3	2	2.54	12			
180	180	BLDG. 260	41.5	42	3	2	2.54	12			
185	185	BLDG. 261	39.5	39.5	3	2	2.54	12			
190	190	BLDG. 268	92	92	3	3	2.54	12			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
100	78	50	78		70	70		ROOM	LIGHT30	YES
105	78	50	78		70	70		ROOM	LIGHT30	YES
110	78	50	78		70	70		ROOM	LIGHT30	YES
115	78	50	78		70	70		ROOM	LIGHT30	YES
125	78	50	78		70	70		ROOM	LIGHT30	YES
130	78	50	78		70	70		ROOM	LIGHT30	YES
135	78	50	78		70	70		ROOM	LIGHT30	YES
140	- 78	50	78		70	70		ROOM	LIGHT30	YES
145	78	50	78		70	70		ROOM	LIGHT30	YES
150	78	50	78		70	70		ROOM	LIGHT30	YES
155	78	50	78		70	70		ROOM	LIGHT30	YES
160	78	50	78		70	70		ROOM	LIGHT30	YES
165	78	50	78		70	70		ROOM	LIGHT30	YES
170	78	50	78		70	70		ROOM	LIGHT30	YES
175	78	50	78		70	70		ROOM	LIGHT30	YES
180	78	50	78		70	70		ROOM	LIGHT30	YES
185	78	50	78		70	70		ROOM	LIGHT30	YES
190	78	50	78		70	70		ROOM	LIGHT30	YES

Card 22			1	Roof Para	neters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
100	1	NO	47	33	0.05	40	0	80	
105	1	YES			0.05	40		75	
110	1	YES			0.08	40		75	
115	1	YES			0.08	40		75	
125	1	NO	69	69	0.05	40		45	
130	1	YES			0.08	40		60	

Card 22				Roof Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
135	1	YES			0.08	40		60	
140	1	YES			0.08	40		60	
145	1	YES			0.08	40		60	
150	1	YES			0.08	40		60	
155	1	YES			0.08	40		60	
160	1	YES			0.08	40		60	
165	1	NO	64	64	0.08	40		60	
170	1	YES			0.08	40		60	
175	1	NO	22.5	22.5	0.08	40		45	
180	1	YES			0.08	40		60	
185	1	YES			0.08	40		60	
190	1	YES			0.08	40		65	

Card 24				Wall F	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
100	1	118	10	.16	64	0			
100	2	83	10	.16	64	90			
100	3	118	10	.16	64	180			
100	4	83	10	.16	64	270			
105	1	115	14	.014	64	0			
105	2	135	14	0.14	64	90			
105	3	115	14	0.14	64	180			
105	4	134	14	0.14	64	270			
110	1	292	12	0.14	64	225			
110	2	60	12	0.14	64	315			
110	3	292	12	0.14	64	45			
110	4	60	12	0.14	64	135			
115	1	292	12	0.14	64	225			
115	2	60	12	0.14	64	315			
115	3	292	12	0.14	64	45			
115	4	60	12	0.14	64	135			
125	1	308	12	0.11	64	0			
125	2	77	12	0.11	64	90			
125	3	308	12	0.11	64	180			
125	4	77	12	0.11	64	270			
130	1	41	12	0.14	64	0			
130	2	39	12	0.14	64	90			
130	3	42	12	0.14	64	180			
130	4	39	12	0.14	64	270			
135	1	41	12	0.14	64	0			
135	2	39	12	0.14	64	90			
135	3	42	12	0.14	64	180			
135	4	39	12	0.14	64	270			

					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
140	1	41	12	0.14	64	0			
140	2	39	12	0.14	64	90			
140	3	42	12	0.14	64	180			
140	4	39	12	0.14	64	270			
145	1	39	12	0.14	64	0			
145	2	42	12	0.14	64	90			
145	3	39	12	0.14	64	180			
145	4	42	12	0.14	64	270			
150	1	39	12	0.14	64	0			
150	2	42	12	0.14	64	90			
150	3	39	12	0.14	64	180			
150	4	42	12	0.14	64	270			
155	1	70	13	0.14	64	0			
155	2	70	13	0.14	64	180			
160	1	40	13	0.14	64	0			
160	2	53	13	0.14	64	90			
160	3	40	13	0.14	64	180			
160	4	53	13	0.14	64	270			
165	1	110	13	0.14	64	0			
165	2	53	13	0.14	64	90			
165	3	40	13	0.14	64	180			
165	4	53	13	0.14	64	270			
170	1	53 -	13	0.14	64	0			
170	2	110	13	0.14	64	90			
170	3	53	13	0.14	64	180			
170	4	40	13	0.14	64	270			
175	1	36	12	0.14	64	0			
175	2	56	12	0.14	64	90			
175	3	36	12	0.14	64	180			
175	4	56	12	0.14	64	270			
180	1	33	12	0.14	64	0			
180	2	53.5	12	0.14	64	90			
180	3	33	12	0.14	64	180			
180	4	53.5	12	0.14	64	270			
185	1	35	12	0.14	64	0			
185 185	2	44 35	12 12	0.14 0.14	64 64	90 180			
185	3 4	35 44	12		64 64	270			
190	1	136	12	0.14 0.14	64	0			
190	2	71	12	0.14	64	90			
190	3	136	12	0.14	64	180			
100	4	71	12	0.14	64	270			

				Pct Glass			Excernal	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of		Shading	Shading	Shading	Solar to	Visible	Visible
umber	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
00	1	5	3.5	5	1.1	0.67					
00	2	5	3.5	6	1.1	0.67					
.00	3	5	3.5	7	1.1	0.67					
00	4	5	3.5	6	1.1	0.67					
05	1	3	7.5	10	1.1	0.67	3				
05	2	3	7.5	11	1.1	0.67					
05	3	3	7.5	9	1.1	0.67					
.05	4	3	7.5	11	1.1	0.67					
.10	1	8	4	25	1.1	0.67					
.10	2	8	4	4	1.1	0.67					
.10	3	8	4	22	1.1	0.67	3				
110	4	8	4	4	1.1	0.67					
115	1	8	4	25	1.1	0.67					
115	2	8	4	4	1.1	0.67					
115	3	8	4	22	1.1	0.67	3				
115	4	8	4	4	1.1	0.67					
.25	1	8	4	25	1.1	1					
125	2	8	4	4	1.1	1					
.25	3	8	4	22	1.1	1					
.25	4	8	4	4	1.1	1					
130	1	4	2	4	1.1	0.67					
130	2	4	2	4	1.1	0.67					
130	3	4	2	5	1.1	0.67					
130	4	4	2	3	1.1	0.67					•
.35	1	4	2	4	1.1	0.67					
.35	2	4	2	4	1.1	0.67					
.35	3	4	2	5	1.1	0.67					
.35	4	4	2	3	1.1	0.67					
L40	1	4	2	4	1.1	0.67					
140	2	4	2	4	1.1	0.67					
140	3	4	2	5	1.1	0.67					
140	4	4	2	3	1.1	0.67					
145	1	4	2	3	1.1	0.67					
145	2	4	2	4	1.1	0.67					
L45	3	4	2	3	1.1	0.67					
145	4	4	2	5	1.1	0.67					
150	1	4	2	3	1.1	0.67					
150	2	4	2	4	1.1	0.67					
150	3	4	2	3	1.1	0.67					
150	4	4									
155	1	6	2	5 6	1.1	0.67	_				
			3		1.1	1	3				
155	2	6	3	6	1.1	1	3				
160	1	6	3	6	1.1	1	3				
160	2	6	3	4	1.1	1					
160	3	6	3	4	1.1	1					
160	4	6	3	5	1.1	1					
L65	1	8	3	10	1.1	1	3				
.65	2	8	3	5	1.1	1					
165 165	3 4	8 8	3 3	4 5	1.1	1					

Card 25	;				W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance
170	3	8	3	5	1.1	0.67					
170	4	8	3	4	1.1	0.67					
175	1	8	2	3	1.1	0.67					
175	2	8	2	6	1.1	0.67					
175	3	8	2	2	1.1	0.67					
175	4	8	2	6	1.1	0.67					
180	1	6	3	4	1.1	1					
180	2	6	3	2	1.1	1					
180	3	6	3	2	1.1	1	3				
180	4	6	3	2	1.1	1					
185	1	6	3	4	1.1	1					
185	2	6	3	4	1.1	1					
185	3	6	3	2	1.1	1	3				
185	4	6	3	4	1.1	1					
190	1	6	3	9	1.1	0.67					
190	2	6	3	1	1.1	0.67					
190	3	6	3	5	1.1	0.67					
190	4	6	3	4	1.1	0.67					

Card 26				S	chedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
100	FSHOFFIC	FSHOFFIC								
105	FSHMUSP	FSHMUSL								
110	FSHOFFIC	FSHOFFIC								
115	FSHOFFIC	FSHOFFIC								
125	FSHOFFIC	FSHOFFIC								
130	FSHOFFIC	FSHOFFIC								
135	FSHOFFIC	FSHOFFIC								
140	FSHOFFIC	FSHOFFIC								
145	FSHOFFIC	FSHOFFIC								
150	AVAIL	AVAIL								
155	FSHOFFIC	FSHOFFIC								
160	FSHCLASP	FSHCLASL								
165	FSHOFFIC	FSHOFFIC								
170	FSHOFFIC	FSHOFFIC								
175	FSHOFFIC	FSHOFFIC								
180	FSHOFFIC	FSHOFFIC								
185	FSHOFFIC	FSHOFFIC								
190	FSHOFFIC	FSHOFFIC								

							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Туре	Factor	Ret. Air	Point 1	Point 2
100	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
105	25	PEOPLE	250	200	1.8	WATT-SF	ASHRAE2				
110	48	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
115	48	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
125	17	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
130	4	PEOPLE	250	200	1.8	WATT-SF	ASHRAE2				
135	15	PEOPLE	250	200	1.8	WATT-SF	ASHRAE2				
140	15	PEOPLE	250	200	0.6	WATT-SF	ASHRAE2		•		
145	1	PEOPLE	250	200	2.5	WATT-SF	ASHRAE2				
150	2	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				
155	8	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2				
160	40	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2				
165	15	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
170	12	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
175	5	PEOPLE	250	200	1.25	WATT-SF	ASHRAE2				
180	6	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				
185	6	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				
190	25	PEOPLE	250	200	1.25	WATT-SF	ASHRAE2				

	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
toom	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
lumber	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	-
.00	1	COMPUTERS	1	WATT-SF	FSHOFFIC	NONE					
.05	1	MUSEUM EQ.	1.2	WATT-SF	FSHMUSL	NONE					
.10	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
.15	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
.25	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
.30	1	OFFICE EQ.	0.3	WATT-SF	FSHOFFIC	NONE					
.35	1	OFFICE EQ.	0.3	WATT-SF	FSHOFFIC	NONE					
.40	1	OFFICE EQ.	0.8	WATT-SF	FSHOFFIC	NONE					
.45	1	OFFICE EQ.	1.0	WATT-SF	FSHOFFIC	NONE					
.50	1	OFFICE EQ.	1.0	WATT-SF	AVAIL	NONE					
.55	1	OFFICE EQ.	1.7	WATT-SF	FSHOFFIC	NONE					
.60	1	CLASS EQ.	0.5	WATT-SF	FSHCLASL	NONE					
.65	1	OFFICE EQ.	1.8	WATT-SF	FSHOFFIC	NONE					
.70	1	OFFICE EQ.	1.0	WATT-SF	FSHOFFIC	NONE					
.75	1	OFFICE EQ.	2.3	WATT-SF	FSHOFFIC	NONE					
.80	1	OFFICE EQ.	2.7	WATT-SF	FSHOFFIC	NONE					
.85	1	OFFICE EQ.	2.8	WATT-SF	FSHOFFIC	NONE					
.90	1	OFFICE EQ.	1.5	WATT-SF	FSHOFFIC	NONE					

Card 29					Room Air	flows				
		Ventil	ation			Infilt	tration			
Room	Cooling				Coo	ling	Hea	ting	Reheat	Minimum
Number			Value	Units	Value	Units	Value	Units		
100	20	CFM-P	20	CFM-P						

		Venti	lation			Infil	tration			
Room	Coo	ling	Hea	ting	Coo	ling	Hea	ting	Reheat	Minimum
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
110	20	CFM-P	20	CFM-P						
115	20	CFM-P	20	CFM-P						
125	20	CFM-P	20	CFM-P						
130	20	CFM-P	20	CFM-P						
135	20	CFM-P	20	CFM-P						
140	20	CFM-P	20	CFM-P						
145	20	CFM-P	20	CFM-P						
150	20	CFM-P	20	CFM-P						
155	20	CFM-P	20	CFM-P						
160	15	CFM-P	15	CFM-P						
165	20	CFM-P	20	CFM-P						
170	20	CFM-P	20	CFM-P						
175	20	CFM-P	20	CFM-P						
180	20	CFM-P	20	CFM-P						
185	20	CFM-P	20	CFM-P						
190	990	CFM	990	CFM						

Card 31			Part	ition Param	eters -				
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No
160	1 .	48	13	0.14	64	HRLYOADB			
165	1	70	13	0.32	64	HRLYOADB			
170	1	70	13	0.32	64	HRLYOADB			

Card 33-				E	xternal Shad	ing			
		OVERHA	NG			VERTICAL F	'INS		
		Height				Left		Right	Adjacent
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building
Туре	Height	Glass	Out	Width	Left	Out	Right	Out	Flag
3	5	2	8						

------ System Section Alternative #1 -----

Card 39- System Alternative

Number Description

1 EXISTING AIRSIDE EQUIPMENT

Card 40			Syste	m Type			
			OPTION	AL VENTIL	ATION SYST	EM	
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	SZ						
2	COMP						
3	SZ						
4	MZ						
5	FC						
6	PTAC						
7	PTAC						
8	PTAC						
9	PTAC						
10	SZ						
11	PTAC						
12	PTAC						
13	PTAC						
14	PTAC						
15	FC						
16	FC						
17	MZ						

Card 41					Zone A	ssignmen	ıt					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	100	100										
2	105	105										
3	110	110										
4	115	115										
5	125	125										
6	130	130										
7	135	135										
8	140	140										
9	145	145										
10	150	150										
11	155	160										
12	165	165										
13	170	170										
14	175	175										
15	180	180										
16	185	185										
17	190	190										

Card 42 Fan SP and Duct Parameters													
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return		
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air		
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path		
1	1.0	1.0											
2	1												

Card 42	!			Fan	SP and Duct Parameters						
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
3	1										
4	1										
5	1										
6	1										
7	1										
8	1										
9	1										
10	1										
11	1										
12	1										
13	1										
14	1										
15	1										
16	1										
17	2										

Card 45 Equipment Schedules										
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1	OFF					OFF	OFF	OFF		
2						FTSAMHTG	FTSAMHTG	FTSAMHTG		
3	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
4	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
5	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
8						FTSAMHTG	FTSAMHTG	FTSAMHTG		
9						FTSAMHTG	FTSAMHTG	FTSAMHTG		
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
11						FTSAMHTG	FTSAMHTG	FTSAMHTG		
12						FTSAMHTG	FTSAMHTG	FTSAMHTG		
13						FTSAMHTG	FTSAMHTG	FTSAMHTG		
15	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
16	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
17						FTSAMHTG	FTSAMHTG	FTSAMHTG		

----- Equipment Section Alternative #1 -----

Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift 1

EXISTING WATERSIDE EQUIPMENT

Card 60Card Formula Card Cooling Load Assignment												
Load	All Coil											
Asgn	Loads To	Equipment	-Grou	p 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Ref	Cool Ref	Sizing	Begin	End	Begin End			Begin End				
1	1	BLKPLANT	1	1						-	-	
2	2	BLKPLANT	2	2								
3	3	BLKPLANT	3	3								
4	4	BLKPLANT	4	4								
5	5	BLKPLANT	5	5								
6	7	BLKPLANT	6	6								
7	8	BLKPLANT	7	7								
8	9	BLKPLANT	8	8								
9	10	BLKPLANT	9	9								
10	11	BLKPLANT	10	10								
11	12	BLKPLANT	11	11								
12	13	BLKPLANT	12	12								
13	15	BLKPLANT	13	13								
14	16	BLKPLANT	14	14								
15	17	BLKPLANT	15	16								
16	18	BLKPLANT	17	17								

Card	62				Cool	ling Equipme	ent Par	ameters					
		Num	COOLING						Seq		Demand		
Ref	Code	Of	Capac	city	Energ	gy	Capa	city	Ener	gy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
1	EQ1113	1	10	TONS	17.6	KW							
2	EQ1132L	1	35	TONS	39.8	KW							
3	ACC1	1	40	TONS	58.5	KW							
4	ACC1	1	29	TONS	37.8	KW							
5	ACC1	1	3	TONS	6.1	KW					1	PAR	
6	ACC1	1	25	TONS	46	KW					2	PAR	
7	EQ1307	1	3	TONS	4.2	KW							
8	EQ1307	1	6	TONS	8.2	KW							
9	EQ1307	1	10.5	TONS	15.5	KW							
10	EQ1307	1	3	TONS	3.7	KW							
11	EQ1113	1	3	TONS	3.8	KW							
12	EQ1307	1	12	TONS	14.0	KW							
13	EQ1113	1	5	TONS	10.3	KW					1	PAR	
14	EQ1307	1	12	TONS	16.8	KW					2	PAR	
15	EQ1307	1	8	TONS	11.2	KW							
16	EQ1307	1	3	TONS	3.7	KW							
17	ACC1	1	15	TONS	27	KW							
18	ACC1	1	20	TONS	27.3	KW							

Card	ard 63 Cooling Pumps and References												
			CONDE										
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.			
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.			
1	.75	KW											

Card	1 63			Cooling Pu	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
2			2.2	KW					1	2
3	1.49	KW								
4	2.24	KW								
6	2.38	KW								
13	0.56	KW								
17	0.37	KW								1
18	0.56	KW								

Card 65 Heating Load Assignment											
Load	All Coil										
Assignment	Loads To	-Grou	ıp 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begir	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1	1								
2	2	2	2								
3	3	3	3								
4	4	4	4								
5	5	5	5								
6	6	6	6								
7	7	7	7								
8	8	8	8								
9	9	9	9								
10	10	10	10								
11	11	11	11								
12	12	12	12								
13	13	13	13								
14	14	14	14								
15	15	15	16								
16	16	17	17								

Card 67 Heating Equipment Parameters															
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand	
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit	
Numbe	r Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number	
1	BOILERWT	1	.37	KW	327	MBH	450	MBH							
2	EQ2201	1			140	MBH	195.4	MBH							
3	BOILERWT	1	0.75	KW	587	MBH	810	MBH							
4	BOILERWT	1	0.56	KW	201	MBH	250	MBH				3			
5	BOILERWT	1	2.38	KW	108.8	MBH	154.7	MBH							
6	EQ2263	1			4.4	KW	100	PCTEFF							
7	EQ2263	1			8.9	KW	100	PCTEFF							
8	BOILERWT	1	0.19	KW	125.1	MBH	174.4	MBH							

Card 67	'				Неа	ting Equip	ment Par	cameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
9	EQ2201	1			16.7	MBH	35	MBH						
10	EQ2201	1			16.7	MBH	35	MBH						
11	EQ2201	1			115	MBH	157.3	MBH						
12	BOILERWT	1	0.56	KW	47.2	MBH	65	MBH						
13	EQ2201	1			149.2	MBH	208	MBH						
14	EQ2263	1			3.7	KW	100	PCTEFF						
15	BOILERWT	1	0.37	KW	47.4	MBH	66	MBH				4		
16	BOILERWT	1	0.56	KW	125.1	MBH	160	MBH						

Card 69 Fan Equipment Parameters												
System												
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional					
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation					
1	TYPFAN											
2	TYPFAN											
3	TYPFAN											
4	TYPFAN											
5	TYPFAN											
6	TYPFAN											
7	TYPFAN											
8	TYPFAN											
9	TYPFAN											
10	TYPFAN											
11	TYPFAN											
12	TYPFAN											
13	·TYPFAN											
14	TYPFAN											
15	TYPFAN											
16	TYPFAN											
17	TYPFAN											

Card 70				Fan	Equip	ment K	W Over:	rides				
]	MAIN S	YSTEM-		OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORI'	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KM	KW	KW	Fan	Fan	Fan	Fan	Fan
2	2.4											
3	3.7											
4	11.2											
5	13.4											
15	0.7											
16	0.7											
17	6.3											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
1	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	1			
2	DISTR. LOSS	0	MBH	FTSAMHTG	HOT-LD	1			
3	DISTR. LOSS	0.24	TONS	FTSAMCLG	CHILL-LD	2			
4	DISTR. LOSS	2.75	MBH	FTSAMHTG	HOT-LD	2			
5	DISTR. LOSS	0.95	TONS	FTSAMCLG	CHILL-LD	3			
6	DISTR. LOSS	5.65	MBH	FTSAMHTG	HOT-LD	3			
7	DISTR. LOSS	1.17	TONS	FTSAMCLG	CHILL-LD	4			
8	DISTR. LOSS	5.65	MBH	FTSAMHTG	HOT-LD	4			
9	DISTR. LOSS	1.14	TONS	FTSAMCLG	CHILL-LD	5			
10	DISTR. LOSS	3.85	MBH	FTSAMHTG	HOT-LD	5			
11	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	6			
12	DISTR. LOSS	0.6	MBH	FTSAMHTG	HOT-LD	6			
13	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	7			
14	DISTR. LOSS	1.0	MBH	FTSAMHTG	HOT-LD	7			
15	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	8			
16	DISTR. LOSS	1.0	MBH	FTSAMHTG	HOT-LD	8			
17	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	9			
18	DISTR. LOSS	0.5	MBH	FTSAMHTG	HOT-LD	9			
19	DISTR. LOSS	0.06	TONS	FTSAMCLG	CHILL-LD	10			
20	DISTR. LOSS	0	MBH	FTSAMHTG	HOT-LD	10			
21	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	11			
22	DISTR. LOSS	2.8	MBH	FTSAMHTG	HOT-LD	11			
23	DISTR. LOSS	0.45	TONS	FTSAMCLG	CHILL-LD	12			
24	DISTR. LOSS	2.0	MBH	FTSAMHTG	HOT-LD	12			
25	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	13			
26	DISTR. LOSS	2.1	MBH	FTSAMHTG	HOT-LD	13 .			
27	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	14			
28	DISTR. LOSS	0.8	MBH	FTSAMHTG	HOT-LD	14			
29	DISTR. LOSS	0.1	TONS		CHILL-LD	15			
30	DISTR. LOSS	1.6	MBH	FTSAMHTG	HOT-LD	15			
31	DISTR. LOSS	0.3	TONS		CHILL-LD	16			
32	DISTR. LOSS	2.9	MBH	FTSAMHTG	HOT-LD	16			

Card 7	Card 74				/ Cooling] Tower	Parameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Туре	Туре	Cells	Low Spd	Value	Units
1	EQ5100			1.49	KW	T-WATER	R CTOWER	1			

Card	75											
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
1	E05001	0.37	KW									

Card	75				Misce	ellaneous A	ccessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
6	EQ5020	0.37	KW									
7	EQ5020	0.56	KW									
8	EQ5020	0.37	KW									
9	HUMIDIF	6.0	KW	FSHMUSP								

----- Load Section Alternative #2 -----

Card 19- Load Alternative -

Number Description

ECO A-INSTALL EMS FOR HVAC EQUIPMENT

Card 20	ard 20										
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 122	113	113	3	3	2.54	11			
6	6	BLDG 140	50	26	3	5	2.54	15			
10	10	BLDG 124	113	113	3	3	2.54	11			
15	15	BLDG 128	119	119	3	8	2.54	18			
20	20	BLDG 133	100	96	3	8	2.54	18			
25	25	BLDG 134	102	102	3	3	2.54	12			
30	30	BLDG 143	122	122	3	3	2.54	12			
35	35	BLDG 144	122	122	3	3	2.54	12			
40	40	BLDG 145	122	122	3	3	2.54	12			
45	45	BLDG 146	122	122	3	3	2.54	12			
50	50	BLDG 147	122	122	3	3	2.54	12			
55	55	BLDG 149	122	122	3	3	2.54	12			
60	60	BLDG 197	122	122	3	3	2.54	12			
65	65	BLDG 198	68	68	3	5	2.54	14			
70	70	BLDG 199	80	80	3	2	2.54	12			
75	75	BLDG 125	50	26	3	5	2.54	15			
80	80	BLDG 127	50	26	3	5	2.54	15			
85	85	BLDG 135	50	26	3	5	2.54	15			
90	90	BLDG 250-1	142	34	3	2	2.54	10.5			
95	95	BLDG 250-2	195	195	3	2	2.54	10.5			

Card 21 Thermostat Parameters												
		Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet	
	Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On	
	Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor	
	5	78	50	78		70	70		ROOM	LIGHT30	NO	

Card 21				Therm	hermostat Parameters					
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
6	78	50	78		70	70		ROOM	LIGHT30	YES
10	78	50	78		70	70		ROOM	LIGHT30	NO
15	78	50	78		70	70		ROOM	LIGHT30	NO
20	78	50	78		70	70		ROOM	LIGHT30	NO
25	78	50	78		70	70		ROOM	LIGHT30	NO
30	78	50	78		70	70		ROOM	LIGHT30	NO
35	78	50	78		70	70		ROOM	LIGHT30	NO
40	78	50	85		70	65		ROOM	LIGHT30	ио
45	78	50	78		70	70		ROOM	LIGHT30	NO
50	78	50	78		70	70		ROOM	LIGHT30	NO
55	78	50	78		70	70		ROOM	LIGHT30	NO
60	78	50	78		70	70		ROOM	LIGHT30	NO
65	78	50	78		70	70		ROOM	LIGHT30	NO
70	78	50	78		70	70		ROOM	LIGHT30	NO
75	78	50	85		70	65		ROOM	LIGHT30	NO
80	78	50	78		70	70		ROOM	LIGHT30	NO
85	78	50	78		70	70		ROOM	LIGHT30	NO
90	78	50	78		70	70		ROOM	LIGHT30	NO
95	78	50	78		70	70		ROOM	LIGHT30	NO

Card 22			3	Roof Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
5	1	NO	180	30	.08	37	0	60	
6	1	YES			0.08	40		60	
10	1	NO	180	30	.08	37	0	60	
15	1	YES			.08	37	0	60	
20	1	YES			.08	37	0	60	
25	1	NO	73	74	.05	40	0	45	
30	1	NO	146	28	.05	40	0	80	
35	1	NO	146	28	.05	40	0	80	
40	1	NO	146	28	.05	40	0	80	
45	1	NO	146	28	.05	40	0	80	
50	1	NO	146	28	.05	40	0	80	
55	1	NO	146	28	.05	40	0	80	
60	1	NO	146	28	.05	40	0	80	
65	1	NO	39	39	.08	37	0	60	
70	1	NO	56	57	.05	37	0	60	
75	1	YES			.08	37	0	60	
80	1	YES			.08	37	0	60	
85	1	YES			.08	37	0	60	
90	1	YES			.06	23	0	90	
95	1	NO	113	113	.06	23	0	90	

Card 24				Wall F	arameters Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number			Height	U-Value					Multiplier
5	1	360	11	.17	58	330		ni pila	Marcipilei
5	2	60	11	.17	58	60			
5	3	360	11	.17	58	150			
5	4	60	11	.17	58	240			
6	1	50	15	0.17	64	315			
6	2	26	15	0.17	64	45			
6	3	50	15	0.17	64	135			
6	4	26	15	0.17	64	225			
10	1	360	11	.17	58	315			
10	2	60	11	.17	58	45			
10	3	360	11	.17	58	135			
10	4	60	11	.17	58	225			
15	1	100	18	.10	58	315			
15	2	96	18	.10	58	45			
15	3	100	18	.10	52	135			
15	4	96	18	.10	58	225			
20	1	100	18	.10	58	330			
20	2	96	18	.10	58	60			
20	3	100	18	.10	52	150			
20	4	96	18	.10	58	240			
25	1	280	12	.11	88	315			
25	2	60	12	.11	88	45			
25	3	280	12	.11	88	135			÷
25	4	60	12	.11	88	225			
30	1	292	12	.10	58	0			
30	2	56	12	.10	58	90			
30	3	292	12	.10	58	180			
30	4	56	12	.10	58	270			
35	1	292	12	.10	58	0			
35	2	56	12	.10	58	90			
35	3	292	12	.10	58	180			
35	4	56	12	.10	58	270			
40	1	292	12	.10	58	0			
40	2	56	12	.10	58	90			
40	3	292	12	.10	58	180			
40	4	56	12	.10	58	270			
45	1	292	12	.10	58	0			
45	2	56	12	.10	58	90			
45	3	292	12	.10	58	180			
45	4	56	12	.10	58	270			
50	1	292	12	.10	58	90			
50	2	56	12	.10	58	180			
50	3	292	12	.10	58	270			
50	4	56	12	.10	58	0			
55	1	292	12	.10	58	90			
55	2	56	12	.10	58	180			
55	3	292	12	.10	58	270			

Card 24				Wall Pa	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
55	4	56	12	.10	58	0			
60	1	292	12	.10	58	320			
60	2	56	12	.10	58	50			
60	3	292	12	.10	58	140			
60	4	56	12	.10	58	230			
65	1	27.5	14	.12	74	0			
65	2	59	14	.12	74	90			
65	3	27.5	14	.12	74	180			
65	4	59	14	.12	74	270			
70	1	126	12	.12	74	315			
70	2	31	12	.12	74	45			
70	3	126	12	.12	74	135			
70	4	31	12	.12	74	225			
75	1	50	15	.17	58	315			
75	2	26	15	.17	58	45			
75	3	50	15	.17	58	135			
75	4	26	15	.17	58	225			
80	1	50	15	.17	58	315			
80	2	26	15	.17	58	45			
80	3	50	15	.17	58	135			
80	4	26	15	.17	58	225			
85	1	50	15	.17	58	315			
85	2	26	15	.17	58	45			
85	3	50	15	.17	58	135			
85	4	26	15	.17	58	225			
90	1	142	10.5	.12	74	0			
90	2	58	10.5	.12	74	90			
90	3	52	10.5	.12	74	180			
90	4	58	10.5	.12	74	270			
95	1	20	10.5	.12	74	0			
95	2	798	10.5	.12	74	90			
95	3	60	10.5	.12	74	180			
95	4	798	10.5	.12	74	270			

Card 25	5				W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance
5	1	5	3	34	1.1	.67					
5	2	5	3	6	1.1	.67					
5	3	5	3	34	1.1	.67	3				
5	4	5	3	6	1.1	.67					
6	1	8	3	4	0.73	0.67					
6	2	8	3	4	0.73	0.67					
6	3	8	3	4	0.73	0.67					

				Pct Glass			External	Incernal	rercent		Inside
loom	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
umber	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectano
	4	8	3	2	0.73	0.67					
0	1	5	3	34	1.1	.67					
0	2	5	3	6	1.1	.67					
.0	3	5	3	34	1.1	.67	3				
0	4	5	3	6	1.1	.67					
5	1	7	3	8	1.1	.67	3				
.5	2	7	3	7	1.1	.67					
.5	3	7	3	9	1.1	.67					
.5	4	7	3	7	1.1	.67					
0.0	1	7	3	8	1.1	.67	3				
0.0	2	7	3	7	1.1	.67					
0	3	7	3	9	1.1	.67					
20	4	7	3	7	1.1	.67					
25	1	6	3	26	.8	.67					
25	2	6	3	5	.8	.67					
25	3			29	.53	1					
25	4	6	3	5	.8	.67					
30	1	7	3.5	21	1.1	.67	3				
30	2	7	3.5	6	1.1	.67					
30	3			35	1.1	.67	3				
30	4	7	3.5	6	1.1	.67					
35	1	7	3.5	21	1.1	.67	3				
35	2	7	3.5	6	1.1	.67					
35	3	_		35	1.1	.67	3				
35	4	7	3.5	6	1.1	.67					
10	1	7	3.5	21	1.1	.67	3				
10	2	7	3.5	6	1.1	.67	_				
10	3	7	3 5	35	1.1	.67	3				
10 15	4 1	7 7	3.5	6	1.1	.67	_				
	2		3.5	21	1.1	.67	3				
15 15	3	7	3.5	6	1.1	.67	_				
15	4	7	3.5	35 6	1.1	.67	3				
50	1	7	3.5		1.1	.67					
50	2	7	3.5	21 6	1.1	.67	3				
50	3	,	3.5	35	1.1	.67 .67	2				
50	4	7	3.5	6	1.1	.67	3				
55	1	7	3.5	21	1.1	.67	3				
55	2	7	3.5	6	1.1	.67	J				
55	3	•	5.5	35	1.1	.67	3				
55	4	7	3.5	6	1.1	.67	ی				
50	1	7	3.5	21	1.1	.67	3				
60	2	, 7	3.5	6	1.1	.67	J				
50	3	•	5.5	35	1.1	.67	3				
50	4	7	3.5	6	1.1		٥				
55	1	5	3	6	1.1	.67					
55	2	5	3	11	1.1	.67 .67	3				

Card 25 Wall/Glass Parameters												
					Pct Glass			External	Internal	Percent		Inside
	Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
	Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Type	Ret. Air	Transmittance	Reflectance
	65	3	5	3	6	1.1	.67					
	65	4	5	3	11	1.1	.67	3				
	70	1	5	3	10	1.1	.67	3				
	70	2	5 .	3	2	1.1	.67					
	70	3	5	3	10	1.1	.67					
	70	4	5	3	2	1.1	.67					
	75	1	8	3	4	.73	.67					
	75	2	8	3	2	.73	.67					
	75	3	8	3	4	.73	.67					
	75	4	8	3	2	.73	.67					
	80	1	8	3	4	.73	.67					
	80	2	8	3	2	.73	.67					
	80	3	8	3	4	.73	.67					
	80	4	8	3	2	.73	.67					
	85	1	8	3	4	.73	.67					
	85	2	8	3	2	.73	.67					
	85	3	8	3	4	.73	.67					
	85	4	8	3	2	.73	.67					
	90	1	4	2	3	1.1	1					
	90	3	7	5	3	1.1	1					
	90	4	7	5	3	1.1	1					
	95	2	4	2	114	1.1	.67					
	95	3	4	2	6	1.1	.67					
	95	4	4	2	114	1.1	.67					

Card 26				S	chedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHOFFIC	FSHOFFIC				DAYSCHED				
6	FSHOFFIC	FSHOFFIC				DAYSCHED				
10	FSHOFFIC	FSHOFFIC				DAYSCHED				
15	FSHOFFIC	FSHOFFIC				DAYSCHED				
20	FSHOFFIC	FSHOFFIC				DAYSCHED				
25	FSHOFFIC	FSHOFFIC				DAYSCHED				
30	FSHOFFIC	FSHOFFIC				DAYSCHED				
35	FSHOFFIC	FSHOFFIC				DAYSCHED				
40	FSHOFFIC	FSHOFFIC								
45	FSHOFFIC	FSHOFFIC				DAYSCHED				
50	FSHBARRP	FSHBARRL				BARRSCHD				
55	FSHBARRP	FSHBARRL				BARRSCHD				
60	FSHOFFIC	FSHOFFIC				DAYSCHED				
65	FSHOFFIC	FSHOFFIC				DAYSCHED				
70	FSHOFFIC	FSHOFFIC				DAYSCHED				
75	FSHOFFIC	FSHOFFIC								
80	FSHOFFIC	FSHOFFIC				DAYSCHED			•	

			S	Schedules						
				Reheat	Cooling	Heating	Auxiliary	Room	Daylighting	
People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls	
FSHOFFIC	FSHOFFIC				DAYSCHED					
FSHOFFIC	FSHOFFIC				DAYSCHED					
FSHBARRP	FSHBARRL				BARRSCHD					
	People FSHOFFIC FSHOFFIC	People Lights FSHOFFIC FSHOFFIC FSHOFFIC FSHOFFIC	People Lights Ventilation FSHOFFIC FSHOFFIC FSHOFFIC FSHOFFIC	People Lights Ventilation Infiltration FSHOFFIC FSHOFFIC FSHOFFIC	People Lights Ventilation Infiltration Minimum FSHOFFIC F	PeopleLightsVentilationInfiltrationMinimumFansFSHOFFICFSHOFFIC-DAYSCHEDFSHOFFICFSHOFFICDAYSCHED	PeopleLightsVentilationInfiltrationMinimumFansFanFSHOFFICFSHOFFICTOAYSCHEDTOAYSCHEDFSHOFFICFSHOFFICTOAYSCHEDTOAYSCHED	PeopleLightsVentilationInfiltrationMinimumFansFanFanFSHOFFICFSHOFFICTSHOFFICTSHOFFICTSHOFFICTSHOFFIC	People Lights Ventilation Infiltration Minimum Fans Fan Exhaust FSHOFFIC FS	

	Card 27					Peopl	e and Ligh	ts				
								Lighting		Percent	Daylig	hting
	Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
	Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
	5	60	PEOPLE	250	200	2	WATT-SF	ASHRAE2				
	6	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
	10	60	PEOPLE	250	200	2	WATT-SF	ASHRAE2				
	15	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
	20	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
	25	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
	30	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
	35	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
	40	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
	45	175	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
	50	45	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
	55	45	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
	60	250	SF-PERS	250	200	2.25	WATT-SF	ASHRAE2				
	65	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
1	70	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2				
	75	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
	80	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
	85	6	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
	90	160	SF-PERS	250	200	2	WATT-SF	INCAND				
	95	160	SF-PERS	250	200	1.5	WATT-SF	INCAND				

Card 28	}			Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
6	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
10	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
15	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
20	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
25	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
30	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
35	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
40	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
45	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
50	1	T.VETC.	1	WATT-SF	FSHBARRL	NONE					

Card 28				Misc	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
55	1	T.VETC.	1	WATT-SF	FSHBARRL	NONE					
60	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
65	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
70	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
75	1	COMPUTER	2	WATT-SF	FSHOFFIC	NONE					
80	1	COMPUTER	2	WATT-SF	FSHOFFIC	NONE					
85	1	COMPUTER	2	WATT-SF	FSHOFFIC	NONE					
90	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
95	1	COMPUTER	1	WATT-SF	FSHBARRL	NONE					

Card 29					Room Air:	flows				
		Venti	lation			Infil	tration			
Room	Coo	ling	Heat	ing	Coo	ling	Heat	ting	Reheat	Minimum
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
5	20	CFM-P	20	CFM-P						
6	20	CFM-P	20	CFM-P						
10	20	CFM-P	20	CFM-P						
15	20	CFM-P	20	CFM-P						
20	20	CFM-P	20	CFM-P						
25	20	CFM-P	20	CFM-P						
30	20	CFM-P	20	CFM-P	•					
35	20	CFM-P	20	CFM-P						
40	20	CFM-P	20	CFM-P						
45	20	CFM-P	20	CFM-P						
50	15	CFM-P	15	CFM-P						
55	15	CFM-P	15	CFM-P						
60	20	CFM-P	20	CFM-P						
65	20	CFM-P	20	CFM-P						
70	20	CFM-P	20	CFM-P						
75	20	CFM-P	20	CFM-P						
80	20	CFM-P	20	CFM-P						
85	20	CFM-P	20	CFM-P						
90	20	CFM-P	20	CFM-P						
95	20	CFM-P	20	CFM-P						

Card 32				Exposed Flo	or Parame	ters					
	Exposed	Slab-				E	xposed Flo	or			
Room	Floor	Perimeter	Loss	Floor	Floor	Const	Temp	Cooling	Heating	Adjacent	
Number	Number	Length	Coefficient	Area ,	U-Value	Type	Flag	Temp	Temp	Room No	
5	1			5400	.19	119	HRLYOADB				
10	1			5400	.19	119	HRLYOADB				
15	1			14224	.19	119	HRLYOADB				
20	1			9600	.19	119	HRLYOADB				

Card 32				Exposed Flo	or Parame	ters				
	Exposed	Slab-				E	exposed Flo	or		
Room	Floor	Perimeter	Loss	Floor	Floor	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Coefficient	Area	U-Value	Туре	Flag	Temp	Temp	Room No
50	1			5400	.19	119	HRLYOADB			
55	1			5400	.19	119	HRLYOADB			
70	1			3906	.25	119	HRLYOADB			

Card 33-				E	xternal Shad	ling			
	+	OVERHA	NG			VERTICAL F	INS		
		Height				Left		Right	Adjacent
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building
Туре	Height	Glass	Out	Width	Left	Out	Right	Out	Flag
3	5	2	8						
		sy	stem Section	Alter	native #2				

Card 39- System Alternative

Number Description
2 ECO A-INSTALL EMS AIRSIDE SYS.

Card 40----- System Type ----------OPTIONAL VENTILATION SYSTEM-----System Ventil Set System Deck Cooling Heating Cooling Heating Static Number Type Location SADBVh SADBVh Schedule Schedule Pressure 1 MZ SZ 3 MZ 4 MZ 5 MZ MZ 6 7 MZ MZ 9 PTAC 10 11 15 MZ 16 FC 17 SZ 18 sz

Card 41					Zone A	ssignmen	t					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	5										
2	6	6										
3	10	10										
4	15	15										
5	20	20										
6	25	25										
7	30	30										
8	35	35										
9	40	40										
10	45	45										
11	50	50										
12	55	55										
13	60	60										
14	65	65										
15	70	70										
16	75	75										
17	80	80										
18	85	85										
19	90	90						,				
20	95	95										

Card 42				Fan	SP an	d Duct P	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1										
2	1										
3	1										
4	2.3										
5	2.3										
6	1.5										
7	1.4										
8	1.4										
9	.5										
10	1.4										

Card 42				Fan	SP an	d Duct P	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
11	1.4										
12	1.4										
13	1.4										
14	1.5										
15	1.5										
16	1										
17	1										
18	1										
19	2.5										
20	2.5										

Card 45				Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
2	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
3	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
4	OFF					OFF	OFF	OFF		
5	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
6	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
7	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
8	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
9	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
11	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
12	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
13	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
14	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
15	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
16	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
17	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
18	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
19	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
20	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

Card 46				- EMS/BAS	Schedules -				
System	Discrim	Night	Optimum	Optimum	DU	TY CYCLIN	IG	System HR	Room HR
Set	Control	Purge	Start	Stop	On Period	Pattern	Maximum	Exhaust	Exhaust
Number	Schedule	Schedule	Schedule	Schedule	Schedule	Length	Off Time	Schedule	Schedule
1			OPSTART	OPSTOP					
2			OPSTART	OPSTOP					
3			OPSTART	OPSTOP					

System	Discrim	Night	Optimum	Optimum	DU	TY CYCLIN	G	System HR	Room HR
Set	Control	Purge	Start	Stop	On Period	Pattern	Maximum	Exhaust	Exhaust
Number	Schedule	Schedule	Schedule	Schedule	Schedule	Length	Off Time	Schedule	Schedule
4			OPSTART	OPSTOP					
5			OPSTART	OPSTOP					
6			OPSTART	OPSTOP					
7			OPSTART	OPSTOP					
8			OPSTART	OPSTOP					
10			OPSTART	OPSTOP					
11			OPSTRTB	OPSTPB					
12			OPSTRTB	OPSTPB					
13			OPSTART	OPSTOP					
14			OPSTART	OPSTOP					
15			OPSTART	OPSTOP					
17			OPSTART	OPSTOP					
18			OPSTART	OPSTOP					
19			OPSTART	OPSTOP					
20			OPSTRTB	OPSTPB					

------ Equipment Section Alternative #2 ------

Card 60------ Cooling Load Assignment------Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End BLKPLANT 1 2 BLKPLANT 3 3 16 16 BLKPLANT 4 3 BLKPLANT 5 5 BLKPLANT 6 18 18 BLKPLANT BLKPLANT BLKPLANT 10 BLKPLANT 10 10 11 BLKPLANT 11 12 BLKPLANT 13 13 11 12 12 13 BLKPLANT 14 14 13 14 BLKPLANT 15 15 BLKPLANT 17 17 14 15

Card	62				Coc	oling Equip	pment Par	ameters					
Cool	Equip	Num		COOL	NG			HEAT REG	COVERY		Seq		Demand
Ref	Code	Of	Capa	city	Ener	gy	Capa	city	Ene	rgy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
1	ACC2	1	40	TONS	70.4	KW							
2	ACC2	1	50	TONS	88	KW							
3	ACC2	1	40	TONS	70.4	KW							
4	ACC1	1	25	TONS	44	KW							
5	ACC1	1	30	TONS	52.8	KW							
6	ACC2	1	45	TONS	79.2	KW							
7	ACC1	1	4	TONS	5.81	KW					1	PAR	
8	ACC2	1	45	TONS	79.2	KW					2	PAR	
9	EQ1307	1	46	TONS	55.0	KW							
10	ACC1	1	40	TONS	70.4	KW							
11	ACC2	1	50	TONS	88	KW							
12	ACC2	1	50	TONS	88	KW							
13	EQ1113	1	10	TONS	14.4	KW							
14	ACC1	1	15	TONS	26.4	KM							
15	EQ1161	1	4.5	TONS	7.0	KW							
16	ACC2	1	100	TONS	176	KW							

Card	63			Cooling Put	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
1	2.24	KW								3
2	2.24	KW								5
3	1.12	KW								
4	1.12	KW								
5	.37	KW								
6	2.24	KM								
7	2.24	KW								
8	2.24	KW								
10	1.12	KM								
11	3.73	KW								
12	1.49	KW								
13	1.12	KW								
14	1.49	KW								
16	5.6	KW								

Cool	Max	Load		Free		Cond	Cond	Cond Rej	Cond Rej	Cond Re
Ref	CW	Shed	Evap	Cooling	Heat	Entering	Min Oper	To Ref	To Ref	@ HW
Num	Reset	Economizer	Precool	Type	Source	Temp	Temp	Туре	Number	Temp
1	10									
2	10									
3	10									
4	10									
5	10									
6	10									
8	10									
10	10									
1 1	10									
12	10									
14	10									
16	10									

Card 65						Heating	Load Assign	ment				
Load	All Coil											
Assignment	Loads To	-Grou	p 1-	-Grou	p 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin	End	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1	2									
2	2	3	3									
3	3	4	4									
4	4 .	5	5									
5	5	6	6	18	18							•
6	6	7	7									
7	7	8	8									
8	8	9	9									
9	9	10	10									
10	10	11	11									
11	11	12	12									
12	12	13	13									
13	13	14	14									
14	14	15	15									
15	15	17	17									
16	16	19	20									

Card 67					Hea	ting Equip	ment Par	ameters						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1	1.12	KW	618	MBH	850	MBH				2		
2	BOILERWT	1	1.12	KW	618	MBH	850	MBH				4		
3	BOILERWT	1	0.37	KW	109	MBH	150	MBH						
4	BOILERWT	1	.37	KM	109	MBH	150	MBH				1		
5	BOILERWT	1	.37	KW	596	MBH	820	MBH						
6	BOILERWT	1	.75	KW	596	MBH	820	MBH						
7	BOILERWT	1	.75	KW	596	MBH	820	MBH						

Card 67	·				Hea	ting Equip	oment Pa	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
8	EQ2263	1			515.2	MBH	53.59	KW						
9	BOILERWT	1	.75	KW	596	MBH	820	MBH						
10	BOILERWT	1	.75	KW	596	MBH	820	MBH						
11	BOILERWT	1	.75	KW	596	MBH	820	MBH						
12	BOILERWT	1	.75	KW	1273	MBH	1750	MBH						
13	BOILERWT	1	.56	KW	327	MBH	450	MBH						
14	BOILERWT	1	1.12	KW	145	MBH	200	MBH						
15	EQ2454	1			33	MBH	45	MBH						
16	STEAMBLR	1			727	MBH	1000	MBH	1					

Card 69			Fan Equipm	ent Parame	ters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						
10	TYPFAN						
11	TYPFAN						
12	TYPFAN						
13	TYPFAN						
14	TYPFAN						
15	TYPFAN						
16	TYPFAN						
17	TYPFAN						
18	TYPFAN						
19	TYPFAN						
20	TYPFAN						

Card 70				Fan	Equip	ment K	W Over	rides				
		MAIN S	YSTEM-		OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	8.2											
2	0.7											
2	0 0											

Set Fan Fan Fan Fan Number KW KW KW KW 5 7.5 6 8.2		Fan	Equip	ment K	W Over	rides						
		MAIN S	YSTEM-		OTH	ER SYS	TEM	r	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KM	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
5	7.5											
6	8.2											
11	7.5											
12	7.5											
13	6.7											
17	2.2											
19	5.6											
20	34.0											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
	Descrip	Value	Units			Number			Temp
1	PIPE-PUMP HT LOS	1.27	TONS	FTSAMCLG	CHILL-LD	1			
2	PIPE HT LOS	7.35	MBH	FTSAMHTG	HOT-LD	1			
3	PIPE-PUMP HT LOS	1.32	TONS	FTSAMCLG	CHILL-LD	2			
4	PIPE HT LOSS	7.36	MBH	FTSAMHTG	HOT-LD	2			
5	PIPE-PUMP HT LOS	0.0	TONS	FTSAMCLG	CHILL-LD	3			
6	PIPE HT LOSS	0.0	MBH	FTSAMHTG	HOT-LD	3			
7	PIPE-PUMP HT LOS	.83	TONS	FTSAMCLG	CHILL-LD	4			
8	PIPE HT LOSS	6.05	MBH	FTSAMHTG	HOT-LD	4			
9	PIPE-PUMP HT LOS	0.89	TONS	FTSAMCLG	CHILL-LD	5			
10	PIPE HT LOSS	4.5	MBH	FTSAMHTG	HOT-LD	5			
11	PIPE-PUMP HT LOS	1.3	TONS	FTSAMCLG	CHILL-LD	6			
12	PIPE HT LOS	6.1	MBH	FTSAMHTG	HOT-LD	6			
13	PIPE-PUMP HT LOS	1.3	TONS	FTSAMCLG	CHILL-LD	8			
14	PIPE HT LOSS	6.1	MBH	FTSAMHTG	HOT-LD	7			
15	COMPR HEAT	1.39	TONS	FTSAMCLG	CHILL-LD	9		•	
16	REFRIG. HT LOSS	7.1	MBH	FTSAMHTG	HOT-LD	8			
17	PIPE-PUMP HT LOS	0.98	TONS	FTSAMCLG	CHILL-LD	10			
18	PIPE HT LOSS	6.1	MBH	FTSAMHTG	HOT-LD	9			
19	PIPE-PUMP HT LOS	1.98	TONS	FTSAMCLG	CHILL-LD	11			
20	PIPE HT LOSS	5.0	MBH	FTSAMHTG	HOT-LD	10			
21	PIPE HT LOSS	5.0	MBH	FTSAMHTG	HOT-LD	11			
22	PIPE-PUMP HT LOS	1.04	TONS	FTSAMCLG	CHILL-LD	12			
23	PIPE HT LOSS	5.45	MBH	FTSAMHTG	HOT-LD	12			
24	PIPE-PUMP HT LOS	.53	TONS	FTSAMCLG	CHILL-LD	13			
25	PIPE HT LOSS	1.95	MBH	FTSAMHTG	HOT-LD	13			
26	PIPE-PUMP HT LOS	0.72	TONS	FTSAMCLG	CHILL-LD	14			
27	PIPE HT LOSS	3.55	MBH	FTSAMHTG	HOT-LD	14			
28	PIPE HT LOSS	.11	TONS	FTSAMCLG	CHILL-LD	15			
29	PIPE HT LOSS	0.85	MBH	FTSAMHTG	HOT-LD	15			
30	PIPE-PUMP HT LOS	3	TONS	FTSAMCLG	CHILL-LD	16			
31	PIPE HT LOSS	12.32	MBH	FTSAMHTG	HOT-LD	16			

Card 7	74			Condenser	/ Coolin	g Tower	Parameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
1	EQ5100			1.49	KW	T-WATER	CTOWER	1			

Card	75				Misc	ellaneous A	accessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
1	EQ5240	3.73	KW									
2	EQ5020	2.2	KW									
3	EQ5001	2.24	KW									
4	EQ5020	2.2	KW									
5	EQ5001	2.24	KW									
6	EQ5020	0.37	KW									
7	EQ5020	0.56	KW									
8	EQ5020	0.37	KW									
9	HUMIDIF	6.0	KW	FSHMUSP								

Card	75				Misce	ellaneous A	ccessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
2	HUMIDIF	6.0	KW	FSHMUSP								
3	EQ5020	0.56	KW	FTSAMHTG								
4	EQ5020	0.37	KW	FTSAMHTG								

----- Load Section Alternative #2 ------

Card 19- Load Alternative -Number Description

2 ECO A-INSTALL EMS FOR HVAC EQUIPMENT

	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
100	100	BLDG. 142	65	65	3	2	2.54	10			
105	105	BLDG. 123	72	72	3	10	2.54	24			
110	110	BLDG. 126	94.5	94.5	3	2	2.54	12			
115	115	BLDG. 131	94.5	94.5	3	2	2.54	12			
125	125	BLDG. 129	97	97	3	3	2.54	12			
130	130	BLDG. 151	40	40.5	3	1	2.54	11			
135	135	BLDG. 154	40	40.5	3	1	2.54	11			
140	140	BLDG. 156	40	40.5	3	1	2.54	11			
145	145	BLDG. 157	40	40.5	3	1	2.54	11			
150	150	BLDG. 159	40	40.5	3	1	2.54	11			
155	155	BLDG. 152 ADMIN	44.5	44.5	3	2.5	2.54	15			
160	160	BLDG. 152 CLASS	46	46	3	2.5	2.54	15			
165	165	BLDG. 155	90.5	91	3	2.5	2.54	15			
170	170	BLDG. 158	64	64	3	2.5	2.54	15			
175	175	BLDG. 141	31.2	32	3	2	2.54	12			
180	180	BLDG. 260	41.5	42	3	2	2.54	12			
185	185	BLDG. 261	39.5	39.5	3	2	2.54	12			
190	190	BLDG. 268	92	92	3	3	2.54	12			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
100	78	50	78		70	70		ROOM	LIGHT30	YES
105	78	50	78		70	70		ROOM	LIGHT30	YES

Card 21	Cooling Room Cooling Cooling Hosting H													
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet				
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On				
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor				
110	78	50	78		70	70		ROOM	LIGHT30	YES				
115	78	50	78		70	70		ROOM	LIGHT30	YES				
125	78	50	78		70	70		ROOM	LIGHT30	YES				
130	78	50	85		70	65		ROOM	LIGHT30	YES				
135	78	50	85		70	65		ROOM	LIGHT30	YES				
140	78	50	85		70	65		ROOM	LIGHT30	YES				
145	78	50	85		70	65		ROOM	LIGHT30	YES				
150	78	50	85		70	65		ROOM	LIGHT30	YES				
155	78	50	85		70	65		ROOM	LIGHT30	YES				
160	78	50	85		70	65		ROOM	LIGHT30	YES				
165	78	50	78		70	70		ROOM	LIGHT30	YES				
170	78	50	85		70	65		ROOM	LIGHT30	YES				
175	78	50	85		70	65		ROOM	LIGHT30	YES				
180	78	50	85		70	65		ROOM	LIGHT30	YES				
185	78	50	85		70	65		ROOM	LIGHT30	YES				
190	78	50	78		70	70		ROOM	LIGHT30	YES				

Card 22	ard 22 Roof Parameters											
		Roof										
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof			
Number	Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha			
100	1	NO	47	33	0.05	40	0	80				
105	1	YES			0.05	40		75				
110	1	YES			0.08	40		75				
115	1	YES			0.08	40		75				
125	1	NO	69	69	0.05	40		45				
130	1	YES			0.08	40		60				
135	1	YES			0.08	40		60				
140	1	YES			0.08	40		60				
145	1	YES			0.08	40		60				
150	1	YES			0.08	40		60				
155	1	YES			0.08	40		60				
160	1	YES			0.08	40		60				
165	1	NO	64	64	0.08	40		60				
170	1	YES			0.08	40		60				
175	1	NO	22.5	22.5	0.08	40		45				
180	1	YES			0.08	40		60				
185	1	YES			0.08	40		60				
190	1	YES			0.08	40		65				

Card 24 Wall Parameters											
		Ground									
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance		
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier		
100	1	118	10	.16	64	0					

Card 24				Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
100	2	83	10	.16	64	90			
100	3	118	10	.16	64	180			
100	4	83	10	.16	64	270			
105	1	115	14	.014	64	0			
105	2	135	14	0.14	64	90			
105	3	115	14	0.14	64	180			
105	4	134	14	0.14	64	270			
110	1	292	12	0.14	64	225			
110	2	60	12	0.14	64	315			
110	3	292	12	0.14	64	45			
110	4	60	12	0.14	64	135			
115	1	292	12	0.14	64	225			
115	2	60	12	0.14	64	315			
115	3	292	12	0.14	64	45			
115	4	60	12	0.14	64	135			
125	1	308	12	0.11	64	0			
125	2	77	12	0.11	64	90			
125	3	308	12	0.11	64	180			
125	4	77	12	0.11	64	270			
130	1	41	12	0.14	64	0			
130	2	39	12	0.14	64	90			
130	3	42	12	0.14	64	180			
130	4	39	12	0.14	64	270			
135	1	41	12	0.14	64	0			
135	2	39	12	0.14	64	90			
135	3	42	12	0.14	64	180			
135	4	39	12	0.14	64	270			
140	1	41	12	0.14	64	0			
140	2	39	12	0.14	64	90			
140	3	42	12	0.14	64	180			
140	4	39	12	0.14	64	270			
145	1	39	12	0.14	64	0			
145	2	42	12	0.14	64	90			
145	3	39	12	0.14	64	180			
145	4	42	12	0.14	64	270			
150	1	39	12	0.14	64	0			
150	2	42	12	0.14	64	90			
150	3	39	12	0.14	64	180			
150	4	42	12	0.14	64	270			
155	1	70	13	0.14	64	0			
155	2	70	13	0.14	64	180			
160	1	40	13	0.14	64	0			
160	2	53	13	0.14	64	90			
160	3	40	13	0.14	64	180			
160	4	53	13	0.14	64	270			

Card 24 Wall P					arameters					
						Wall				Ground
	Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
	Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
	165	1	110	13	0.14	64	0			
	165	2	53	13	0.14	64	90			
	165	3	40	13	0.14	64	180			
	165	4	53	13	0.14	64	270			
	170	1	53	13	0.14	64	0			
	170	2	110	13	0.14	64	90			
	170	3	53	13	0.14	64	180			
	170	4	40	13	0.14	64	270			
	175	1	36	12	0.14	64	0			
	175	2	56	12	0.14	64	90			
	175	3	36	12	0.14	64	180			
	175	4	56	12	0.14	64	270			
	180	1	33	12	0.14	64	9			
	180	2	53.5	12	0.14	64	90			
	180	3	33	12	0.14	64	180			
	180	4	53.5	12	0.14	64	270			
	185	1	35	12	0.14	64	0			
	185	2	44	12	0.14	64	90			
	185	3	35	12	0.14	64	180			
	185	4	44	12	0.14	64	270			
	190	1	136	12	0.14	64	0			
	190	2	71	12	0.14	64	90			
	190	3	136	12	0.14	64	180			
	190	4	71	12	0.14	64	270			

Card 25 Wal							all/Glass Par	ameters					
					Pct Glass			External	Internal	Percent		Inside	
Ro	moo	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible	
Nu	umber	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance	
10	0	1	5	3.5	5	1.1	0.67						
10	0	2	5	3.5	6	1.1	0.67						
10	00	3	5	3.5	7	1.1	0.67						
10	0 (4	5	3.5	6	1.1	0.67						
10		1	3	7.5	10	1.1	0.67	3					
10)5	2	3	7.5	11	1.1	0.67						
10)5	3	3	7.5	9	1.1	0.67						
10	5	4	3	7.5	11	1.1	0.67						
11	LO	1	8	4	25	1.1	0.67						
11	LO	2	8	4	4	1.1	0.67						
11	LO	3	8	4	22	1.1	0.67	3					
11	LO	4	8	4	4	1.1	0.67						
11	L5	1	8	4	25	1.1	0.67						
11	L5	2	8	4	4	1.1	0.67						
11	15	3	8	4	22	1.1	0.67	3					
11	L5	4	8	4	4	1.1	0.67						

				Pct Glass			Excernal	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Tumber	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Туре	Ret. Air	Transmittance	Reflectano
25	1	8	4	25	1.1	1					
.25	2	8	4	4	1.1	1					
.25	3	8	4	22	1.1	1					
.25	4	8	4	4	1.1	1					
.30	1	4	2	4	1.1	0.67					
130	2	4	2	4	1.1	0.67					
.30	3	4	2	5	1.1	0.67					
L30	4	4	2	3	1.1	0.67					
L35	1	4	2	4	1.1	0.67					
135	2	4	2	4	1.1	0.67					
135	3	4	2	5	1.1	0.67					
135	4	4	2	3	1.1	0.67					
140	1	4	2	4	1.1	0.67					
140	2	4	2	4	1.1	0.67					
140	3	4	2	5	1.1	0.67					
140	4	4	2	3	1.1	0.67					
145	1	4	2	3	1.1	0.67					
145	2	4	2	4	1.1	0.67					
145	3	4	2	3	1.1	0.67					
145	4	4	2	5	1.1	0.67					
150	1	4	2	3	1.1	0.67					
150	2	4	2	4	1.1	0.67					
150	3	4	2	3	1.1	0.67			*		
150	4	4	2	5	1.1	0.67					
155	1	6	3	6	1.1	1	3				
155	2	6	3	6	1.1	1	3				
160	1	6	3	6	1.1	1	3				
160	2	6	3	4	1.1	1					
160	3	6	3	4	1.1	1					
160	4	6	3	5	1.1	1					
165	1	8	3	10	1.1	1	3				
165	2	8	3	5	1.1	1					
165	3	8	3	4	1.1	1					
165	4	8	3	5	1.1	1					
170	1	8	3	5	1.1	1	_				
170	2	8	3	10	1.1	0.67	3				
170	3	8	3	5	1.1	0.67					
170	4	8	3	4	1.1	0.67					
175	1	8	2	3	1.1	0.67					
175	2	8	2	6	1.1	0.67					
175	3	8	2	2	1.1	0.67					
175	4	8	2	6	1.1	0.67					
180	1	6	3	4	1.1	1					
180	2	6	3	2	1.1	1					
180	3	6	3	2	1.1	1	3				
180	4	6	3	2	1.1	1					

Card 25	d 25 Wall/Glass Parameters											
				Pct Glass			External	Internal	Percent		Inside	
Room	Wall.	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible	
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Туре	Ret. Air	Transmittance	Reflectance	
185	2	6	3	4	1.1	1						
185	3	6	3	2	1.1	1	3					
185	4	6	3	4	1.1	1						
190	1	6	3	9	1.1	0.67						
190	2	6	3	1	1.1	0.67						
190	3	6	3	5	1.1	0.67						
190	4	6	3	4	1.1	0.67						

Card 26				S	chedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
100	FSHOFFIC	FSHOFFIC				DAYSCHED				
105	FSHMUSP	FSHMUSL								
110	FSHOFFIC	FSHOFFIC				DAYSCHED				
115	FSHOFFIC	FSHOFFIC				DAYSCHED				
125	FSHOFFIC	FSHOFFIC				DAYSCHED				
130	FSHOFFIC	FSHOFFIC								
135	FSHOFFIC	FSHOFFIC								
140	FSHOFFIC	FSHOFFIC								
145	FSHOFFIC	FSHOFFIC								
150	AVAIL	AVAIL								
155	FSHOFFIC	FSHOFFIC								
160	FSHCLASP	FSHCLASL								
165	FSHOFFIC	FSHOFFIC				DAYSCHED				
170	FSHOFFIC	FSHOFFIC								
175	FSHOFFIC	FSHOFFIC								
180	FSHOFFIC	FSHOFFIC								
185	FSHOFFIC	FSHOFFIC								
190	FSHOFFIC	FSHOFFIC				DAYSCHED				

Card 27												
							Lighting		Percent	Daylig	hting	
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference	
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2	
100	175	SF-PERS	250	200	2	WATT-SF	ASHRAE2					
105	25	PEOPLE	250	200	1.8	WATT-SF	ASHRAE2					
110	48	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2					
115	48	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2					
125	17	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2					
130	4	PEOPLE	250	200	1.8	WATT-SF	ASHRAE2					
135	15	PEOPLE	250	200	1.8	WATT-SF	ASHRAE2					
140	15	PEOPLE	250	200	0.6	WATT-SF	ASHRAE2					
145	1	PEOPLE	250	200	2.5	WATT-SF	ASHRAE2					

Card 27	Card 27 People and Lights													
							Lighting		Percent	Daylig	hting			
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference			
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2			
150	2	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2							
155	8	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2							
160	40	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2							
165	15	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2							
170	12	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2							
175	5	PEOPLE	250	200	1.25	WATT-SF	ASHRAE2							
180	6	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2							
185	6	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2							
190	25	PEOPLE	250	200	1.25	WATT-SF	ASHRAE2							

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
100	1	COMPUTERS	1	WATT-SF	FSHOFFIC	NONE					
105	1	MUSEUM EQ.	1.2	WATT-SF	FSHMUSL	NONE					
110	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
115	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
125	1	OFFICE EQ.	2.0	WATT-SF	FSHOFFIC	NONE					
130	1	OFFICE EQ.	0.3	WATT-SF	FSHOFFIC	NONE					
135	1	OFFICE EQ.	0.3	WATT-SF	FSHOFFIC	NONE					
140	1	OFFICE EQ.	0.8	WATT-SF	FSHOFFIC	NONE					
145	1	OFFICE EQ.	1.0	WATT-SF	FSHOFFIC	NONE					
150	1	OFFICE EQ.	1.0	WATT-SF	AVAIL	NONE					
155	1	OFFICE EQ.	1.7	WATT-SF	FSHOFFIC	NONE					
160	1	CLASS EQ.	0.5	WATT-SF	FSHCLASL	NONE					
165	1	OFFICE EQ.	1.8	WATT-SF	FSHOFFIC	NONE					
170	1	OFFICE EQ.	1.0	WATT-SF	FSHOFFIC	NONE					
175	1	OFFICE EQ.	2.3	WATT-SF	FSHOFFIC	NONE					
180	1	OFFICE EQ.	2.7	WATT-SF	FSHOFFIC	NONE					
185	1	OFFICE EQ.	2.8	WATT-SF	FSHOFFIC	NONE					
190	1	OFFICE EQ.	1.5	WATT-SF	FSHOFFIC	NONE					

Card 29)				Room Air	flows				
		Ventil	lation			Infil	tration			
Room	Coo	ling	Hea	ting	Coo	ling	Неа	ting	Reheat	Minimum
Number					Value	Units	Value	Units	Value	Units
100	20	CFM-P	20	CFM-P						
105	20	CFM-P	20	CFM-P						
110	20	CFM-P	20	CFM-P						
115	20	CFM-P	20	CFM-P						
125	20	CFM-P	20	CFM-P						
130	20	CFM-P	20	CFM-P						

		Ventila	tion			In	filtratio	n			
Room	Cooli	ng	Heati	ng	C	ooling		Heating		Reheat M	inimum
Number	Value	Units	Value	Units	Value	Unit	s Val	.ue	Units	Value	Units
135	20	CFM-P	20	CFM-P							
140	20	CFM-P	20	CFM-P							
145	20	CFM-P	20	CFM-P							
150	20	CFM-P	20	CFM-P							
155	20	CFM-P	20	CFM-P							
160	15 CFM-P 15 CFM-P										
165	20	CFM-P 20 CFM-P									
170	20	CFM-P	20	CFM-P							
175	20	CFM-P	20	CFM-P							
180	20	CFM-P	20	CFM-P							
185	20	CFM-P	20	CFM-P							
190	990	CFM	990	CFM							
Card 31			Part	ition Param	eters -						
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent	;	
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No		
160	1	48	13	0.14	64	HRLYOADB					
165	1	70	13	0.32	64	HRLYOADB					
170	1	70	13	0.32	64	HRLYOADB					

Card 33-	Card 33 External Shading												
		OVERHA	NG			VERTICAL F	INS						
		Height				Left		Right	Adjacent				
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building				
Type	Height	Glass	Out	Width	Left	Out	Right	Out	Flag				
3	5	2	8										

Card 39- System Alternative

Number Description

ECO A-INSTALL EMS AIRSIDE EQ

	Card 40	Card 40 System Type												
OPTIONAL VENTILATION SYSTEM														
				OFIION	WT AFMITT	MIION SISI	Eld							
	System		Ventil					Fan						
	Set	System	Deck	Cooling	Heating	Cooling	Heating	Static						
	Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure						
	1	SZ												

----- System Section Alternative #2 -----

Card 40			Syste	т Туре			
			OPTION	AL VENTIL	ATION SYST	EM	
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
2	COMP						
3	SZ						
4	MZ						
5	FC						
6	PTAC						
7	PTAC						
8	PTAC						
9	PTAC						
10	SZ						
11	PTAC						
12	PTAC						
13	PTAC						
14	PTAC						
15	FC						
16	FC						
17	MZ						

System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End										
1	100	100										
2	105	105										
3	110	110										
4	115	115										
5	125	125										
6	130	130										
7	135	135										
8	140	140										
9	145	145										
10	150	150										
11	155	160										
12	165	165										
13	170	170										
14	175	175										
15	180	180										
16	185	185										
17	190	190										

Card 42				Fan	SP ar	nd Duct F	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0	1.0									
2	1										
3	1										
4	1										
5	1										
6	1										
7	1										
8	1										
9	1										
10	1										
11	1										
12	1										
13	1										
14	1										
15	1										
16	1										
17	2										

Card 45				Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1	OFF					OFF	OFF	OFF		
2						FTSAMHTG	FTSAMHTG	FTSAMHTG		
3	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
4	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
5	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
8						FTSAMHTG	FTSAMHTG	FTSAMHTG		
9						FTSAMHTG	FTSAMHTG	FTSAMHTG		
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
11						FTSAMHTG	FTSAMHTG	FTSAMHTG		
12						FTSAMHTG	FTSAMHTG	FTSAMHTG		
13						FTSAMHTG	FTSAMHTG	FTSAMHTG		
15	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
16	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
17						FTSAMHTG	FTSAMHTG	FTSAMHTG		

Card 46				- EMS/BAS	Schedules -				
System	Discrim	Night	Optimum	Optimum	DU	TY CYCLIN	G	System HR	Room HR
Set	Control	Purge	Start	Stop	On Period	Pattern	Maximum	Exhaust	Exhaust
Number	Schedule	Schedule	Schedule	Schedule	Schedule	Length	Off Time	Schedule	Schedule
1			OPSTART	OPSTOP					
3			OPSTART	OPSTOP					
4			OPSTART	OPSTOP					
5			OPSTART	OPSTOP					
12			OPSTART	OPSTOP					
17			OPSTART	OPSTOP					

----- Equipment Section Alternative #2 -----

Card 60----- Cooling Load Assignment-----Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End 1 1 BLKPLANT 1 1 BLKPLANT 2 2 2 3 3 BLKPLANT 3 4 BLKPLANT 4 BLKPLANT 5 5 BLKPLANT 6 6 BLKPLANT 7 BLKPLANT 8 8 9 10 BLKPLANT 9 BLKPLANT 10 10 10 11 11 12 BLKPLANT 11 11 12 13 BLKPLANT 12 12 13 15 BLKPLANT 13 13 14 16 BLKPLANT 14 14 BLKPLANT 15 16 15 17 BLKPLANT 17 17 16 18

ECO A-INSTALL EMS WATERSIDE EQ

Card	Card 62Cooling Equipment Parameters												
Coo	Equip	Num		COOLI	NG			HEAT REC	COVERY		Seq		Demand
Ref	Code	Of	Capa	city	Ener	gy	Capa	city	Ene	rgy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Type	Number
1	EQ1113	1	10	TONS	17.6	KW							
2	EQ1132L	1	35	TONS	39.8	KW							
3	ACC1	1	40	TONS	58.5	KM							
4	ACC1	1	29	TONS	37.8	KW							
5	ACC1	1	3	TONS	6.1	KW					1	PAR	
6	ACC1	1	25	TONS	46	KW					2	PAR	
7	EQ1307	1	3	TONS	4.2	KW							
8	EQ1307	1	6	TONS	8.2	KW							
9	EQ1307	1	10.5	TONS	15.5	KW							
10	EQ1307	1	3	TONS	3.7	KW							
11	EQ1113	1	3	TONS	3.8	KW							
12	EQ1307	1	12	TONS	14.0	KW							
13	EQ1113	1	5	TONS	10.3	KW					1	PAR	
14	EQ1307	1	12	TONS	16.8	KW					2	PAR	

Card	62				Coo	ling Equipm	ent Par	ameters					
Cool	Equip	Num		COOLI	NG			HEAT RE	COVERY		Seq		Demand
Ref	Code	Of	Capa	city	Ener	gy	CapacityEnergy				Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
15	EQ1307	1	8	TONS	11.2	KW							
16	EQ1307	1	3	TONS	3.7	KW							
17	ACC1	1	15	TONS	27	KW							
18	ACC1	1	20 TONS 27.3 KW										

CoolCHILLED WATERCONDENSERHT REC or AUX Switch-	
Ref Full Load Full Load Full Load Full Load Full Load over Cold Cooling M	Misc.
Num Value Units Value Units Value Units Control Storage Tower A	Access.
1 .75 KW	
2 2.2 KW 1 2	2
3 1.49 KW	
4 2.24 KW	
6 2.38 KW	
13 0.56 KW	
17 0.37 KW	1
18 0.56 KW	

Card 65					Heating	Load Assign	ment				
Load	All Coil										
Assignment	Loads To	-Group	1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1	1								
2	2	2	2								
3	3	3	3								
4	4	4	4								
5	5	5	5								
6	6	6	6								
7	7	7	7								
8	8	8	8								
9	9	9	9								
10	10	10	10								
11	11	11	11								
12	12	12	12								
13	13	13	13								
14	14	14	14								
15	15	15	16								
16	16	17	17								

Card 67	'				Неа	ating Equi	oment Par	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1 /	.37	KW	327	MBH	450	MBH						
2	EQ2201	1			140	MBH	195.4	MBH						
3	BOILERWT	1	0.75	KW	587	MBH	810	MBH						
4	BOILERWT	1	0.56	KW	201	MBH	250	MBH				3		
5	BOILERWT	1	2.38	KW	108.8	MBH	154.7	MBH						
6	EQ2263	1			4.4	KW	100	PCTEFF						
7	EQ2263	1			8.9	KW	100	PCTEFF						
8	BOILERWT	1	0.19	KW	125.1	MBH	174.4	MBH						
9	EQ2201	1			16.7	MBH	35	MBH						
10	EQ2201	1			16.7	MBH	35	MBH						
11	EQ2201	1			115	MBH	157.3	MBH						
12	BOILERWT	1	0.56	KW	47.2	MBH	65	MBH						
13	EQ2201	1			149.2	MBH	208	MBH						
14	EQ2263	1			3.7	KW	100	PCTEFF						
15	BOILERWT	1	0.37	KW	47.4	MBH	66	MBH				4		
16	BOILERWT	1	0.56	KW	125.1	MBH	160	MBH						

Card 69			Fan Equipm	ent Parame	ters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						
10	TYPFAN						
11	TYPFAN						
12	TYPFAN						
13	TYPFAN						
14	TYPFAN						
15	TYPFAN						
16	TYPFAN						
17	TYPFAN						

Card 70				Fan	Equip	ment K	W Over	rides				
MAIN SYSTEM				OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORITY		
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
2	2.4											
3	3.7											
4	11.2											

Card 70	Fan	Equip	ment K	W Over	rides							
	MAIN SYSTEM				OTHER SYSTEM			D	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
15	0.7											
16	0.7											
17	6.3											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly		-		Equip			
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value				Number		Temp	Temp
1	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	1		-	-
2	DISTR. LOSS	0	MBH	FTSAMHTG	HOT-LD	1			
3	DISTR. LOSS	0.24	TONS	FTSAMCLG	CHILL-LD	2			
4	DISTR. LOSS	2.75	MBH	FTSAMHTG	HOT-LD	2			
5	DISTR. LOSS	0.95	TONS	FTSAMCLG	CHILL-LD	3			
6	DISTR. LOSS	5.65	MBH	FTSAMHTG	HOT-LD	3			
7	DISTR. LOSS	1.17	TONS	FTSAMCLG	CHILL-LD	4			
8	DISTR. LOSS	5.65	MBH	FTSAMHTG	HOT-LD	4			
9	DISTR. LOSS	1.14	TONS	FTSAMCLG	CHILL-LD	5			
10	DISTR. LOSS	3.85	MBH	FTSAMHTG	HOT-LD	5			
11	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	6			
12	DISTR. LOSS	0.6	MBH	FTSAMHTG	HOT-LD	6			
13	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	7			
14	DISTR. LOSS	1.0	MBH	FTSAMHTG	HOT-LD	7			
15	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	8			
16	DISTR. LOSS	1.0	MBH	FTSAMHTG	HOT-LD	8			
17	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	9			
18	DISTR. LOSS	0.5	MBH	FTSAMHTG	HOT-LD	9			
19	DISTR. LOSS	0.06	TONS	FTSAMCLG	CHILL-LD	10			
20	DISTR. LOSS	0	MBH	FTSAMHTG	HOT-LD	10			
21	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	11			
22	DISTR. LOSS	2.8	MBH	FTSAMHTG	HOT-LD	11			
23	DISTR. LOSS	0.45	TONS	FTSAMCLG	CHILL-LD	12			
24	DISTR. LOSS	2.0	MBH	FTSAMHTG	HOT-LD	12			
25	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	13			
26	DISTR. LOSS	2.1	MBH	FTSAMHTG	HOT-LD	13			
27	DISTR. LOSS	0	TONS	FTSAMCLG	CHILL-LD	14			
28	DISTR. LOSS	0.8	MBH	FTSAMHTG	HOT-LD	14			
29	DISTR. LOSS	0.1	TONS	FTSAMCLG	CHILL-LD	15			
30	DISTR. LOSS	1.6	MBH	FTSAMHTG	HOT-LD	15			
31	DISTR. LOSS	0.3	TONS	FTSAMCLG	CHILL-LD	16			
32	DISTR. LOSS	2.9	MBH	FTSAMHTG	HOT-LD	16			

FTSAMHTG

EQ5020

								arameters	,				
	Cooling			Energy		Energy			Number	Percent	Low Spd	Low Spd	
Tower	Tower	Capacity	Capacit	y Consum	p	Consump	Fluid	Tower	Of	Airflow	Energy	Energy	
Ref	Code	Value	Units	Value		Units	Type	Type	Cells	Low Spd	Value	Units	
1	EQ5100			1.49		KW	T-WATER	CTOWER	1				
Card	75					Miscella	neous Acc	essory					
Card	75 #1				#2	Miscella	neous Acc	essory		#3			
Card Misc		Energy	Energy	Sched				-	Sched	#3 Equip	Energy	Energy	Sched
	#1		Energy		#2	ıip E	nergy	Energy S			Energy Value	Energy Units	Sched Code
Misc	#1 Equip	Energy	Energy	Sched	#2 Equ	ıip E	nergy	Energy S	Sched	Equip		٠.	
Misc Ref	#1 Equip Code	Energy Value	Energy Units	Sched	#2 Equ	ıip E	nergy	Energy S	Sched	Equip		٠.	

Utility Description Reference Table

Schedules:

BARRSCHD COOLING FAN SCHEDULE CODE FOR BARACKS

DAYSCHED COOLING FAN SCHEDULE CODE

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHMUSP F.S.H. MUSEUM PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

OFF ALWAYS OFF

OPSTART OPTIMUM START COOLING FAN SCHED. CODE

OPSTOP OPTIMUM STOP COOLING FAN SCHED. CODE

OPSTPB OPTIMUM STOP COOLING FAN SCHED. CODE

OPSTRTB OPTIMUM START COOLING FAN SCHED. CODE

System:

FC FAN COIL SYSTEM

MZ MULTIZONE SYSTEM

PTAC PACKAGED TERMINAL A.C. SYSTEM

SZ SINGLE ZONE SYSTEM

Equipment:

Cooling:

ACC1 TYPICAL AIR COOLED RECIP CHILLER

ACC2 TYPICAL AIR COOLED RECIP CHILLER

EQ1113 AIR-CLD RECIPROCATING < 15 TONS

EQ1161 AIR COOLED COND COMP < 15 TONS

EQ1307 PACKAGED TERMINAL AIR CONDITIONER

Heating:

BOILERWT WATERTUBE BOILER

EQ2263 ELECTRIC RESISTANCE HEAT WITH FAN

EQ2454 RESIDENTIAL GAS FURNACE WITH FAN

STEAMBLR STEAM BOILER

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

Misc

EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME

EQ5020 HEATING WATER CIRCULATION PUMP

EQ5240 BOILER FORCED DRAFT FAN

HUMIDIF HUMIDIFIER

Schedule Name: BARRSCHD

Project: COOLING FAN SCHEDULE CODE FOR B

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

----100

0 24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

100 0

8 0 17 100

Schedule Name: DAYSCHED

Project: COOLING FAN SCHEDULE CODE

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent

0	0
6	100
17	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
12	100

Schedule Name: FSHBARRL

Project: F.S.H. BARRACKS LIGHT\MISC. SCH Location: F.S.H. - SAN ANTONIO TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC.

Comments: LIGHT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 5
17 80
22 5

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	5
8	50
22	5
24	

Schedule Name: FSHBARRP

Project: F.S.H. BARRACKS PEOPLE SCHEDULE

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: PEOPLE SCHEDULE FOR BARRACKS

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent ---0 100 24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent

0	100
8	0
17	80
22	100
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 50
24

Schedule Name: FSHMUSP

Project: F.S.H. MUSEUM PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util	Percent
0		0
10		45
16		0
24		

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util	Percent
	·	
0		0
10	:	100
16		0
24		

Schedule Name: FSHOFFIC

Project: F.S.H. OFFICE INTERNAL LOAD SCH Location: F.S.H. SAN ANTONIO, TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC. - JTC, Comments: ALL INTERNAL LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- ----0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
8	100
12	10
13	100
17	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Schedule Name: FTSAMCLG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH,

Program User: HUITT-ZOLLARS, INC.

Comments: CHILLER SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: MAY Ending Month: OCT
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

24

Starting Month: NOV Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FTSAMHTG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH,

Program User: HUITT-ZOLLARS, INC.

Comments: BOIELR SCHEDULE

Starting Month: JAN Ending Month: APR

Hour Util Percent

0 100

24

Starting Month: MAY Ending Month: OCT

Hour Util Percent

.---

0 0

24

Starting Month: NOV Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

Schedule Name: OFF Project: ALWAYS OFF

Location: Client:

Program User:

Comments:

Starting Month: JAN Ending Month: HTG

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: OPSTART

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Ор	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
6	100
7	0
24	

Schedule Name: OPSTOP

Project: OPTIMUM STOP COOLING FAN SCHED.

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	q0	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour	Util Percent
0	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
16	100
17	0
24	

Schedule Name: OPSTPB

Project: OPTIMUM STOP COOLING FAN SCHED.

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DET AMOUNT OF TIME FAN OF IN B

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Op	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- 0 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

0 0

7 100

8 0

24

Schedule Name: OPSTRTB

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DET AMOUNT OF TIME FOR FAN ON

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Οp	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- 0 0
24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
16	100
17	0
24	

Utility Description Reference Table

Schedules:

AVAIL AVAILABLE (100%)

DAYSCHED COOLING FAN SCHEDULE CODE

FSHCLASL F.S.H. CLASSROOM LIGHTING SCHEDULE

FSHCLASP F.S.H CLASSROOM PEOPLE SCHEDULE

FSHMUSL F.S.H. MUSEUM LIGHTING SCHEDULE

FSHMUSP F.S.H. MUSEUM PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

OFF ALWAYS OFF

OPSTART OPTIMUM START COOLING FAN SCHED. CODE

OPSTOP OPTIMUM STOP COOLING FAN SCHED. CODE

System:

COMP COMPUTER ROOM SYSTEM

FC FAN COIL SYSTEM

MZ MULTIZONE SYSTEM

PTAC PACKAGED TERMINAL A.C. SYSTEM

SZ SINGLE ZONE SYSTEM

Equipment:

Cooling:

ACC1 TYPICAL AIR COOLED RECIP CHILLER

EQ1113 AIR-CLD RECIPROCATING < 15 TONS

EQ1132L WATER COOLED SELF CONTAINED > 15 TONS

EQ1307 PACKAGED TERMINAL AIR CONDITIONER

Heating:

BOILERWT WATERTUBE BOILER

EQ2201 GAS FIRED UNIT HEATER

EQ2263 ELECTRIC RESISTANCE HEAT WITH FAN

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

Misc:

EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME

EQ5020 HEATING WATER CIRCULATION PUMP

HUMIDIF HUMIDIFIER

Schedule Name: AVAIL
Project: AVAILABLE (100)

Location:

Client: VERSION 3.0

Program User: C.D.S. MARKETING
Comments: BUILDING TEMPLATE SERIES

Starting Month: JAN Ending Month: HTG

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

Schedule Name: DAYSCHED

Project: COOLING FAN SCHEDULE CODE

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent 0 0 6 100 17 0 24

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
12	100
16	0
24	

Schedule Name: FSHCLASL

Project: F.S.H. CLASSROOM LIGHTING SCHE Location: EEAP BOILER CHILLER STUDY Client: CORP OF ENGINEERS, PUBLIC WAOEKS Program User: HUITT-ZOLLARS, INC.

Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
8	100
10	0
13	100
14	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FSHCLASP

Project: F.S.H CLASSROOM PEOPLE SCHEDULE Location: EEAP BOILER CHILLER STUDY Client: CORP OF ENGINEERS, PUBLIC WORKS Program User: HUITT-ZOLLARS, INC.

Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
8	100
10	0
13	50
14	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FSHMUSL

Project: F.S.H. MUSEUM LIGHTING SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0

10 100

16 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
10	100
16	0
24	

Schedule Name: FSHMUSP

Project: F.S.H. MUSEUM PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0

16 0

24

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0

10 100

16 0

Schedule Name: FSHOFFIC

Project: F.S.H. OFFICE INTERNAL LOAD SCH Location: F.S.H. SAN ANTONIO, TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC. - JTC, Comments: ALL INTERNAL LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- ----0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent
--- 0 0
24

Schedule Name: FTSAMCLG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH, Program User: HUITT-ZOLLARS, INC.

Comments: CHILLER SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

-

24

Starting Month: MAY Ending Month: OCT

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

24

Starting Month: NOV Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

--- -----

0 0

Schedule Name: FTSAMHTG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH, Program User: HUITT-ZOLLARS, INC.

Comments: BOIELR SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

24

Starting Month: MAY Ending Month: OCT
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: NOV Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

Schedule Name: OFF
Project: ALWAYS OFF
Location:
Client:
Program User:

Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent
---- 0 0
24

Schedule Name: OPSTART

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Οp	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
---- 0 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent
---- 0 0
6 100

Schedule Name: OPSTOP

Project: OPTIMUM STOP COOLING FAN SCHED.

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Οp	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Hour Util Percent

0 0

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
16	100
17	0

	#1				#2				#3				
lisc	Equip	Energy	Energy	Sched	Equi	p Energ	y Energy	Sched	Equip	Energ	ry Er	nergy	Sched
ef	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	. Uı	nits	Code
	EQ5020	1.12	KW										
	EQ5001	2.24	KW										
	EQ5020	1.12	KW										
	EQ5001	2.24	KW										
;	EQ5001	0.37	KW										
,	EQ5020	0.56	KW										
i	EQ5020	0.37	KW										
9	HUMIDIF	6.0	KW	FSHMUSE	,								
	El native Ti	lec Const	ımp Elec I	Demand I	emand Simit		/ TOD Sched			De	emand L Tem		
:						ECO B1 - WA	TER COOLED	CENTRIFUG	AL				
Card	60					Cooling	Load Assign	ment					**
Load Asgn Ref	All Coil	Cooling Equipme	J ent -Group Begin) 1Gi	coup 2-	-Group 3-	-Group 4-	-Group 5	Group	6Gro	oup 7-	-Grou	up 8Grou a End Begin
Load Asgn Ref 1	All Coil Loads To Cool Ref	Cooling Equipme Sizing BLKPLAN	g ent -Group Begin VT 1	o 1Gi End Beg 36	roup 2- gin End	-Group 3- Begin End	-Group 4-	-Group 5 Begin En	Group d Begin	6Grc End Begi	oup 7- in End	-Grou	up 8Grou
Load Asgn Ref Card	All Coil Loads To Cool Ref 1	Cooling Equipme Sizing BLKPLAN	g ent -Group Begin WT 1	o 1Gr End Beg 36	roup 2- gin End	-Group 3- Begin End ling Equipm	-Group 4- Begin End	-Group 5 Begin En	Group d Begin	6Grc End Begi	oup 7- in End Seq	-Grou	np 8Grou n End Begin n End Begin
Load Asgn Ref Card Cool	All Coil Loads To Cool Ref 1 62Equip	Cooling Equipme Sizing BLKPLAI	J ent -Group Begin 1	D 1GI End Beg 36	roup 2- gin End	-Group 3- Begin End ling Equipm	-Group 4- Begin End nent Paramet	-Group 5 Begin En	Group d Begin	6Grc End Begi	oup 7- in End Seq	-Grou Begin	p 8Grou End Begin Demand Limit
coad asgn def card cool	All Coil Loads To Cool Ref 1 62 Equip Code	Cooling Equipme Sizing BLKPLAN Num Of Units	Hent -Group Begin T 1	o 1Gi End Beg 36	roup 2- gin End Coo	-Group 3- Begin End ling Equipm	-Group 4- Begin End nent Paramet	-Group 5 Begin En	Group d Begin	6Gro	oup 7- in End Seq Order	-Grou Begin	np 8Grou n End Begin n End Begin
oad sgn ef dard cool ef	All Coil Loads To Cool Ref 1 62 Equip Code Name	Cooling Equipme Sizing BLKPLAN Num Of Units	Hent -Group Begin T 1 -Capacity	End Beg	roup 2- yin End Coo GEner Value	-Group 3- Begin End ling Equipm gy Units	-Group 4- Begin End nent Paramet	-Group 5 Begin En	Group d Begin	6Gro	oup 7- in End Seq Order Num	-Grou Begin	p 8Grou End Begin Demand Limit
coad sgn def card cool def	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S	Cooling Equipme Sizing BLKPLAN Num Of Units	Hent -Group Begin T 1	End Beg	roup 2- ryin End CooEner Value	-Group 3- Begin End ling Equipm gy Units KW	-Group 4- Begin End nent Paramet	-Group 5 Begin En	Group d Begin	6Gro	oup 7- in End Seq Order Num	-Grou Begin Seq Type	p 8Grou End Begin Demand Limit
coad asgn def Card Cool def Num	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EQ1008L	Cooling Equipme Sizing BLKPLAI Num Of Units 1	Begin Tons Tons	olGi End Beg 36	roup 2- rin End CooEner Value 105	-Group 3- Begin End ling Equipm gy Units KW KW	-Group 4- Begin End ment Paramet	-Group 5 Begin En	Group d Begin ERY Energy Value U	6Gro	oup 7- in End Seq Order Num	-Grou Begin Seq Type	p 8Grou End Begin Demand Limit
coad sgn lef ard Cool lef Jum	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EQ1008L	Cooling Equipme Sizing BLKPLAI Num Of Units 1	Begin To 1	olGi End Beg 36	roup 2- rin End CooEner Value 105 264	-Group 3- Begin End ling Equipm gy Units KW KW	-Group 4- Begin End nent Paramet	-Group 5 Begin En	Group d Begin ERY Energy Value U	6Gro	oup 7- in End Seq Order Num	-Grou Begin Seq Type	p 8Grou End Begin Demand Limit
oad sgn ef ard cool sef fum	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EQ1008L	Cooling Equipme Sizing BLKPLAI Num Of Units 1	gent -Group Begin NT 1	o 1Gi End Beg 36	roup 2- yin End Coo Ener Value 105 264	-Group 3- Begin End ling Equipm gy Units KW KW	-Group 4- Begin End ment Paramet	-Group 5 Begin En	Group d Begin ERY Energy Value U	6Gro	oup 7- in End Seq Order Num 1	-Grou Begin Seq Type PAR PAR	p 8Grou End Begin Demand Limit
coad segn eef Card cool tef tum Card cool	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EQ1008L	Cooling Equipme Sizing BLKPLAI Num Of Units 1	gent -Group Begin NT 1	o 1Gi End Beg 36	roup 2- yin End Coo Ener Value 105 264	-Group 3- Begin End ling Equipm gy Units KW KW	-Group 4- Begin End ment Paramet	-Group 5 Begin En	Group d Begin ERY Energy	6Gro	oup 7- in End Seq Order Num 1	-Grou Begin Seq Type PAR PAR	p 8Grou End Begin Demand Limit
coad asgn teff. Card Cool Ref Tum Card Cool Ref	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EQ1008L . 63 CHILLE: Full Load	Cooling Equipme Sizing BLKPLAI Num Of Units 1 1 D WATER- Full L	Pent -Group Begin T 1	o 1Gi End Beg 36	roup 2- yin End Coo Ener Value 105 264 coling Pu 11 Load	-Group 3- Begin End ling Equipm gy Units KW KW mps and RefHT REC Full Load	-Group 4- Begin End ment Paramet	-Group 5 Begin En	Group d Begin ERYERYEnergy	6Gro	Seq Order Num 1 2	-Grou Begin Seq Type PAR PAR	p 8Grou End Begin Demand Limit

	/1				Base	Utility 1	Parameters							
Base	Base			Hourly	Hourly			Equip	Demar					
Utili	ty Utili	ty		Demand	Demand	Schedule	Energy	Referen	nce Limit	ing E	ntering	Leavi	ng	
Numbe	r Descr	ip		Value	Units	Code	Туре	Number	Numbe	er I	'emp	Temp		
1	DISTR	IBUTION I	LOS	15.3	TONS	FTSAMCLG	CHILL-LD	1						
2	DISTR	IBUTION 1	LOS	10.06	TONS	FTSAMCLG	CHILL-LD	2						
Card	72 Swit	chover Co		s side										
Contr	ol Loa	d Load	Air	Sch	ied									
Refer	ence Val	ue Unit	s DB	Cod	le									
1	170	TONS												
Card	74				Condenser	/ Cooling	g Tower Pa	rameters						
	Cooling				Energy	Energy			Number F	Percent	Low Spo	d Lo	w Spd	
	Tower	_	-	apacity	-	-	Fluid	Tower	Of A	Airflow	Energy	Ene	ergy	
Ref	Code	Value	Ū		Value	Units	Туре	Туре	Cells I	Low Spd	Value	Un:	its	
1	EQ5100				14.9	KW	T-WATER	CTOWER						
2	EQ5100				18.6	KW	T-WATER	CTOWER	1					
Card	59				Equipment	Descript	ion / TOD	Schedules	5					
Card					Equipment d Demand		ion / TOD	Schedules	s				imit	
		lec Consu	ump E		ıd Demand		ion / TOD	Schedules	S			mand L		
Alter Numbe	mative T	lec Consu	ump E ay T	lec Deman	ıd Demand ıy Limit		ion / TOD tive Descr		s			mand L: Temp	imit	
Alter	mative T	lec Consu	ump E ay T	lec Deman	ıd Demand ıy Limit	Alterna		iption			Der	mand L: Temp	imit perature	
Alter Numbe	Emative I	lec Consu Time of Da	ump E ay T S	lec Deman Time of Da Schedule	d Demand y Limit Max KW	Alterna ECO B2	tive Descr - WATER CO	iption OLED CENT	TRIFUGAL V	/ FD	Der	mand L: Temp	imit perature Drift	
Alter Numbe 3	Emative I	lec Consu	ump E ay T S	lec Deman Time of Da Schedule	d Demand y Limit Max KW	Alterna ECO B2	tive Descr - WATER CO	iption OLED CENT	TRIFUGAL V	/ FD	Der	mand L: Temp	imit perature Drift	
Alter Numbe 3 Card Load	mative Terms	Time of Danchedule	ump E ay T S	lec Deman	d Demand y Limit Max KW	Alterna ECO B2	tive Descr - WATER CO	iption OLED CENT ssignment	TRIFUGAL V	J FD	Der	mand L Temp	imit perature Drift	
Alter Numbe 3 Card Load	Enative Ter S 60 All Coil Loads To	lec Consume of Date chedule Cooling Equipme	ump E ay T S	lec Deman ime of Da schedule	d Demand y Limit Max KW -Group 2	Alterna ECO B2	tive Descr - WATER CO ding Load A 3Grou	iption OLED CENT ssignment p 4G:	TRIFUGAL V	VFD 	Schedule	mand L: Tempe I	imit perature DriftGroup	8Group 9-
Alter Numbe 3 Card Load Asgn	Enative Ter S 60 All Coil Loads To	chedule Cooling Equipme	ump E ay T S g ent -	Clec Deman	d Demand y Limit Max KW -Group 2	Alterna ECO B2	tive Descr - WATER CO ding Load A 3Grou	iption OLED CENT ssignment p 4G:	TRIFUGAL V	VFD 	Schedule	mand L: Tempe I	imit perature DriftGroup	
Alter Numbe 3 Card Load	er S 60 All Coil Loads To	chedule Cooling Equipme	ump E ay T S g ent -	lec Deman ime of Da schedule	d Demand y Limit Max KW -Group 2	Alterna ECO B2	tive Descr - WATER CO ding Load A 3Grou	iption OLED CENT ssignment p 4G:	TRIFUGAL V	VFD 	Schedule	mand L: Tempe I	imit perature DriftGroup	8Group 9-
Alter Numbe 3 Card Load Asgn Ref	er S 60 All Coil Loads To Cool Ref	chedule Cooling Equipme Sizing BLKPLAM	ump E ay T S g ent - B NT 1	Clec Deman Time of Da Schedule Group 1- Jegin End	d Demand y Limit Max KW 	Alterna ECO B2 Cool Group d Begin	tive Descr - WATER CO ing Load A 3Grou End Begin	iption OLED CENT ssignment p 4G End Beg	TRIFUGAL V	VFD -Group Begin E	Schedule Schedule 6Growning Begin	mand L: Temple I	imit perature Drift Group Begin E	8Group 9- End Begin End
Alter Numbe 3 Card Load Asgn Ref 1	er S 60 All Coil Loads To Cool Ref	chedule Cooling Equipme Sizing BLKPLAM	ump E ay T S g ent - B NT 1	Clec Deman Cime of Da Schedule Group 1- Jegin End 36	d Demand y Limit Max KW	Alterna ECO B2	tive Descr - WATER CO ing Load A 3Grou End Begin	iption OLED CENT ssignment p 4Gr End Beg	trifugal v	VFD -Group Begin E	Schedule	mand L: Temple I	imit perature Drift Group Begin E	8Group 9- End Begin End
Alter Numbe 3 Card Load Asgn Ref 1	er S 60 All Coil Loads To Cool Ref 1	Cooling Equipme Sizing BLKPLAM	ump E ay T S g ent - B NT 1	Clec Deman	d Demand y Limit Max KW -Group 2 Begin En	Alterna ECO B2 CoolGroup d Begin	tive Descr - WATER CO ing Load A 3Grou End Begin	iption OLED CENT ssignment p 4G: End Beg	TRIFUGAL V	VFD -Group Begin E	Schedule	mand L: Temple I	imit perature Drift -Group Begin E	8Group 9- End Begin End
Alter Numbe 3 Card Load Asgn Ref 1	er S 60 All Coil Loads To Cool Ref 1 62 Equip Code	Cooling Equipme Sizing BLKPLAM	ump E ay T S g ent - B NT 1	Clec Deman Cime of Da Cchedule Group 1- Legin End 36	d Demand y Limit Max KW	Alterna ECO B2 CoolGroup d Begin	tive Descr - WATER CO ing Load A 3Grou End Begin uipment Pa	iption OLED CENT ssignment p 4G: End Beg rametersHEAT acity	trifugal v	JFD -Group Begin E	Schedule	Temple I	imit perature Drift -Group Begin E	8Group 9-
Alter Numbe 3 Card Load Asgn Ref 1 Card Cool Ref Num	Enative Ter S 60 All Coil Loads To Cool Ref 1 62 Equip Code Name	Cooling Equipme Sizing BLKPLAN	ump E ay T S g ent - B NT 1	Clec Deman Cime of Da Cchedule Group 1- Legin End 36	d Demand y Limit Max KW -Group 2 Begin En	Alterna ECO B2 CoolGroup d Begin :	tive Descr - WATER CO ing Load A 3Grou End Begin uipment Pa	iption OLED CENT ssignment p 4G: End Beg	TRIFUGAL V	JFD -Group Begin E	Schedule	mand L: Temy e I up 7- n End Seq Order Num	imit perature Drift -Group Begin E	8Group 9- End Begin End
Alter Numbe 3 Card Load Asgn Ref 1 Card Cool Ref Num	er S 60 All Coil Loads To Cool Ref 1 62 Equip Code	Cooling Equipme Sizing BLKPLAN	ump E ay T S g ent - B NT 1	Clec Deman Cime of Da Cchedule Group 1- Legin End 36	d Demand y Limit Max KW	Alterna ECO B2 CoolGroup d Begin	tive Descr - WATER CO ing Load A 3Grou End Begin uipment Pa	iption OLED CENT ssignment p 4G: End Beg rametersHEAT acity	trifugal v	JFD -Group Begin E	Schedule	mand L: Tem Tem Tem Tem Tem Tem Tem Tem	imit perature Drift -Group Begin E	8Group 9- End Begin End Demand

Card	63			Cooling P	umps and Re	ferences			·	
		WATER								
Ref :	Full Load	Full Load	Full Load	Full Load	Full Load	l Full Lo	ad over	Cold	Cooling	Misc.
Num '	Value	Units	Value	Units	Value	Units	Contro	ol Storage	Tower	Access.
1	14.9	KW	11.2	KW			1		1	
2	37.3	KW	29.8	KW			1		2	
Card	71			Bace	Mtility Day	amatare -				
Base	Base		Hourly	Hourly	ocilicy Far		Equip	Demand		
	ty Utilit	y	Demand	-	Schedule E			Limiting	Entering	Leaving
Numbe			Value			5.	Number	Number	Temp	Temp
1	DISTRI	BUTION LOS	15.3	TONS	FTSAMCLG C		1		•	-
2	DISTRI	BUTION LOS	10.06	TONS	FTSAMCLG C	CHILL-LD	2			
Card	72 Switc	hover Contr	ols utside							
Contr	ol Load			ned						
Refer	ence Valu	e Units D								
1	170	TONS								
Card	74			Condenser	/ Cooling T	Cower Para	meters			
	Cooling				Energy					od Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump Fl	luid 1	Cower Of	Airfl	ow Energy	Energy
Ref	Code	Value	Units	Value	Units Ty	/pe 1	Type Ce	lls Low S	pd Value	Units
1	EQ5100			14.9	KW T-	-WATER (CTOWER 1			
2	EQ5100			18.6	KW T-	-WATER (CTOWER 1			
		Equi	pment Sect	ion Altern	ative #4			-		
Card	59			Equipment	Description	n / TOD So	chedules -			
		ec Consump								emand Limit
Alter		me of Day							20	Temperature
Numbe		hedule		_	Alternativ	ve Descri	otion		Schedul	
4					ECO B3 - V					-
Cn3	60				0.11	_ *				
					Cooling	g Load As	signment			
	All Coil	_	-Croup 1	.Croup 2	Crour 3	Cma	4 0	m E G:	- 6 0	
Asgn Ref	Cool Ref									oup 7Group 8Group 9-
1	1	BLKPLANT	1 36	segin Enc	. Begin En	r pediu	Lud Begin	. mua Begin	na seg:	in End Begin End Begin End
-	1	PTIVETHWY	± 36							

Card	62				Cod	oling Equip	oment Par	ameters -					
Cool	. Equip NumCOOLING							HEAT RECOVERY					Demand
Ref	Code	Of	Capa	city	Ener	gy	Capa	city	Ene	rgy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
1	EQ1008S	1	170	TONS	105 KW						1	PAR	
2	YSCRW22 1 480 TONS 307 KW					KW					2	PAR	

Card	63			Cooling Pu	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
1	14.9	KW	11.2	KW			1		1	
2	37.3	KW	29.8	KW			1		2	

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
1	DISTRIBUTION LOS	15.3	TONS	FTSAMCLG	CHILL-LD	1			
2	DISTRIBUTION LOS	10.06	TONS	FTSAMCLG	CHILL-LD	2			

Card 7	4			Condenser	/ Cooling	Tower 1	Parameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Туре	Type	Cells	Low Spd	Value	Units
1	EQ5100			14.9	KW	T-WATER	CTOWER	1			
2	EQ5100			18.6	KW	T-WATER	CTOWER	1			

ard	75												
	#1				#2				#3				
isc	Equip	Energy	Energy	Sched	Equip	Energy	y Energy	Sched	Equip	Energy	/ Ener	gy S	ched
ef	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Unit	s C	ode
	EQ5020	1.12	KW										
	EQ5001	2.24	KW										
	EQ5020	1.12	KW										
	EQ5001	2.24	KW										
	EQ5001	0.37	KW										
	EQ5020	0.56	KW										
	EQ5020	0.37	KW										
	HUMIDIF	6.0	KW	FSHMUSP									
			· -				/ TOD Sched						
iru				Demand Dem		cription ,	/ IOD Sched	ites			mand Limi		
lter	native T		-	of Day Lim						Del			
ımbe		chedule	Schedu	-		ternative	Description	•		Cabadul	Temper		•
	1 50	ruedare	Bellede	ite max			S ENGINE DR			Schedul	e Dri	LIC	
oad sgn ef	All Coil Loads To Cool Ref	Cooling Equipme	nt -Group Begin	p 1Grou End Begir	p 2	Group 3-	Load Assign -Group 4- Begin End	-Group 5	Group	6Gro	up 70	Group	8Group
ard oad sgn ef	All Coil Loads To Cool Ref 1 62Equip	Cooling Equipme Sizing	nt -Group Begin 1	o 1Grou End Begin 36	p 2 End B	Group 3- Begin End	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV	Group d Begin	6Gro	up 7C n End Be	Group egin E	8Group End Begin Demand
ard oad sgn ef ard ool	All Coil Loads To Cool Ref 1 62 Equip Code	Cooling Equipme Sizing Num -	nt -Group Begin 1	o 1Grou End Begin 36	p 2 End B	Group 3- Begin End Ing Equipm	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV	Group i Begin	6Gro	up 7C n End Be Seq Order S	Group egin E	8Group End Begin Demand Limit
ard oad sgn ef ard ool ef	All Coil Loads To Cool Ref 1 62 Equip Code Name	Cooling Equipme Sizing Num - Of - Units V	nt -Group Begin 1	p 1Grou End Begin 36	p 2(End B - CooliEnergy	Group 3- legin End .ng Equipm Jnits	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV	Group i Begin	6Gro	up 7C n End Be Seq Order S	Group egin E	8Group End Begin Demand
ard oad sgn ef ard ool ef	All Coil Loads To Cool Ref 1 62 Equip Code	Cooling Equipme Sizing Num - Of - Units V	nt -Group Begin 1	p 1Grou End Begin 36	p 2 End B - CooliEnergy ue U	Group 3- Begin End Ing Equipm	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV	Group i Begin	6Gro	up 7C n End Be Seq Order S	Group egin E	8Group End Begin Demand Limit
ard oad sgn ef ard cool ef hum	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EDC80TON	Cooling Equipme Sizing Num - Of - Units V 1 1 4	nt -Group Begin 1	o 1Grot End Begir 36	p 2	Group 3- Begin End Onits WM BH OS and Ref	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV ts V.	Group i Begin : ERY ERY Bulue U	6Gro	up 7C n End Be Seq Order S Num 1	Group egin E	8Group End Begin Demand Limit
ard oad sgn ef ard oool ef um ard oool	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EDC80TON	Cooling Equipme Sizing Num - Of - Units V 1 1 4	nt -Group Begin 1	o 1Grou End Begir 36	p 2	Group 3- Begin End Onits WM BH OS and Ref	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV ts V.	Group i Begin ERY Energy alue U	6Gro	Seq Order S Num 1 2	Group egin E	8Group End Begin Demand Limit
ard oad sgn ef ard oool ef um ard oool	All Coil Loads To Cool Ref 1 62 Equip Code Name EQ1008S EDC80TON 63CHILLE Full Load	Cooling Equipme Sizing Num - Of - Units V 1 1 4 D WATER Full Lo	nt -Group Begin 1	o 1Grou End Begir 36	p 2	Group 3- Begin End Ing Equipm Joits GW BH DS and Ref JOINT REC Full Load	-Group 4- Begin End ent Paramet	-Group 5 Begin End ers EAT RECOV ts V.	Group i Begin	6Gro	Seq Order S Num 1	Group egin E	8Group End Begin Demand Limit

Card 71													
Base	Base		Hourly	Hourly			Equip	Demand					
Utility	Utility	•	Demand	Demand	Schedule	Energy	Referenc	e Limiting	g Entering	Leav	ing		
Number	Descrip	•	Value	Units	Code	Туре	Number	Number	Temp	Temp			
1	DISTRIB	UTION LOS	15.3	TONS	FTSAMCLG	CHILL-LD	1						
2	DISTRIB	UTION LOS	10.1	TONS	FTSAMCLG	CHILL-LD	2						
Card 72	Switch	lover Contr	ols										
Control	Load	O Load A	utside	hed									
		Units D											
1	170	TONS											
						g Tower Pa:							
	Cooling	Comercia	Com = - ! + :	Energy	Energy	m12.1		umber Per		_			
	Tower		Capacity	_	-	Fluid	Tower 0		flow Energ	-	nergy		
	Code EQ5100	Value	Units	Value	Units	Туре		ells Low	Spd Value	e Ü:	nits		
				14.9 22.4	KW KW	T-WATER T-WATER	CTOWER						
					V.M		CTOWER 1						
2 :	EQ5100	Equi	pment Sect		native #3								
)			ion Alter Equipment	Descript								
2	Ele	ec Consump	Elec Dema	ion Alter Equipment nd Demand	Descript					Demand	Limit -		
Card 59	Ele	ec Consump ne of Day	Elec Dema	ion Alter Equipment nd Demand ay Limit	Descript	ion / TOD :	Schedules		I	Demand Te	Limit -		
Card 59 Alterna	Ele	ec Consump	Elec Dema	ion Alter Equipment nd Demand ay Limit	Descript Alterna	ion / TOD :	Schedules		I Schedi	Demand Te	Limit -		
Card 59 Alterna Number 3	Ele Ele Sch	ec Consump ne of Day nedule	Elec Dema Time of D Schedule	ion Alter Equipment nd Demand ay Limit Max KW	Descript Alterna ECO C -	ion / TOD : tive Descr REPLACE B	Schedules iption LRS WITH B		I Schedu T	Demand Te	Limit mperatu	re	
Card 59 Alterna Number 3 Card 65	Ele Ele Sch	ec Consump ne of Day nedule	Elec Dema Time of D Schedule	ion Alter Equipment nd Demand ay Limit Max KW	Descript Alterna ECO C -	ion / TOD : tive Descr REPLACE B	Schedules iption LRS WITH B	OILER PLAN	Schedu	Demand Te	Limit mperatum Drift	re	
Card 59 Alterna Number 3 Card 65 Load Assignm	Ele tive Tim Sch	ec Consump ne of Day nedule Coil	Elec Dema Time of D Schedule	ion Alter Equipment nd Demand ay Limit Max KW	Descript Alterna ECO C - Heatin -Group 3	ion / TOD : tive Descr REPLACE B g Load Ass	Schedules iption LRS WITH B ignment	OILER PLAN	Schedu	Te ale	Limit mperatur Drift	 re 8Gr	oup 9
Card 59 Alterna Number 3 Card 65 Load Assignm Referen	Ele tive Tim Sch	ec Consump ne of Day nedule Coil ds To -	Elec Dema Time of D Schedule	ion Alter Equipment nd Demand ay Limit Max KW	Descript Alterna ECO C - Heatin -Group 3	ion / TOD : tive Descr REPLACE B g Load Ass	Schedules iption LRS WITH B ignment	OILER PLAN	Schedu	Te ale	Limit mperatur Drift	 re 8Gr	oup 9
Card 59 Alterna Number 3 Card 65 Load Assignm	Ele stive Tim Sch All ment Load	ec Consump ne of Day nedule Coil ds To -	Elec Dema Time of D Schedule Group 1- egin End	ion Alter Equipment nd Demand ay Limit Max KW	Descript Alterna ECO C - Heatin -Group 3	ion / TOD : tive Descr REPLACE B g Load Ass	Schedules iption LRS WITH B ignment	OILER PLAN	Schedu	Te ale	Limit mperatur Drift	 re 8Gr	oup 9
Card 59 Alterna Number 3 Card 65 Load Assignm Referen	Ele stive Tim Sch All ment Load ace Heat	ec Consump ne of Day nedule Coil ds To -	Elec Dema Time of D Schedule Group 1- egin End 36	ion Alter Equipment nd Demand ay Limit Max KW -Group 2- Begin End	Descript Alterna ECO C - Heatin -Group 3 Begin En	ion / TOD : tive Descr REPLACE B g Load AssGroup d Begin E	Schedules iption LRS WITH B ignment 4Group nd Begin	OILER PLAN	Schedu F 	Te ule Te ule Te n End	Limit mperatur Drift	 re 8Gr	oup 9
Card 59 Alterna Number 3 Card 65 Load Assignm Referen	Ele stive Tim Sch All ment Load ace Heat	ec Consump ne of Day nedule Coil ds To -	Elec Dema Time of D Schedule Group 1- egin End 36	ion Alter Equipment nd Demand ay Limit Max KW -Group 2- Begin End	Descript Alterna ECO C - Heatin -Group 3 Begin En	ion / TOD : tive Descr REPLACE B g Load AssGroup d d Begin E	Schedules iption LRS WITH B ignment 4Group nd Begin	OILER PLAN	Schedu F 	Te ule Te ule Te n End	Limit mperatur Drift	 re 8Gr	oup 9
Card 59 Alterna Number 3 Card 65 Load Assignm Referen 1 Card 67	Ele stive Tim Sch All ment Load ace Heat 1	cc Consump ne of Day nedule Coil ds To - sing Ref E	Elec Dema Time of D Schedule Group 1- egin End 36	ion Alter Equipment nd Demand ay Limit Max KW -Group 2- Begin End	Descript Alterna ECO C - Heatin -Group 3 Begin En	ion / TOD : tive Descr REPLACE B g Load AssGroup d d Begin E	Schedules iption LRS WITH B ignment 4Group nd Begin Parameter	OILER PLAN	Schedu	Te ule Te ule Te n End	Limit mperatur Drift	 re 8Gr	roup 9 yin En Dema
Card 59 Alterna Number 3 Card 65 Load Assignm Referen 1 Card 67 Heat Ref	Ele ative Tim Sch All ment Load ace Heat 1 Equip Code Name	Coil ds To - ing Ref E Number Of Units	Elec Dema Time of D Schedule Group 1- egin End 36 HW Pmp Full Ld	ion Alter Equipment nd Demand ay Limit Max KW Group 2- Begin End	Descript Alterna ECO C - Heatin -Group 3 Begin En	ion / TOD : tive Descr REPLACE B g Load AssGroup d d Begin E Equipment Ene Rat	Schedules iption LRS WITH B ignment 4Group nd Begin Parameter rgy e	OILER PLAN 5Group End Begin Seq Order	Schedu	Te ile	Limit mperatu: Drift -Group Begin E	 re 8Gr	roup 9 yin En Dema
Card 59 Alterna Number 3 Card 65 Load Assignm Referen 1 Card 67 Heat Ref	Ele ative Tim Sch All ment Load ace Heat 1	Coil ds To - ling Ref E Number Of Units	Elec Dema Time of D Schedule Group 1- egin End 36 HW Pmp Full Ld Value U 7.5 K	Equipment nd Demand ay Limit Max KW	Descript Alterna ECO C - Heatin -Group 3 Begin En - Heating	ion / TOD : tive Descr REPLACE B g Load AssGroup d d Begin E Equipment Ene Rat ts Val	Schedules iption LRS WITH B ignment 4Group nd Begin Parameter rgy e ue Units	OILER PLAN 5Group End Begin Seq Order	Schedu	Te ile	Limit mperatu: Drift -Group Begin E	re 8Gr nd Beg	roup 9 yin En Dema

Card 71-			Base	Utility Pa	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
1	DISTRIBUTION LOS	112.8	MBH	FTSAMHTG	HOT-LD	1			

Utility Description Reference Table

Schedules:

AVAIL AVAILABLE (100%)

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHCLASL F.S.H. CLASSROOM LIGHTING SCHEDULE

FSHCLASP F.S.H CLASSROOM PEOPLE SCHEDULE

FSHMUSL F.S.H. MUSEUM LIGHTING SCHEDULE

FSHMUSP F.S.H. MUSEUM PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

OFF ALWAYS OFF

System:

COMP COMPUTER ROOM SYSTEM

FC FAN COIL SYSTEM

MZ MULTIZONE SYSTEM

SZ SINGLE ZONE SYSTEM

Equipment:

Cooling:

ACC1 TYPICAL AIR COOLED RECIP CHILLER

ACC2 TYPICAL AIR COOLED RECIP CHILLER

EDC80TON ENGINE DRIVEN CHILLER, 80 TONS

EQ1008S 3-STG CENTRIFUGAL < 300 TONS

EQ1113 AIR-CLD RECIPROCATING < 15 TONS

EQ1132L WATER COOLED SELF CONTAINED > 15 TONS

EQ1161 AIR COOLED COND COMP < 15 TONS

EQ1307 PACKAGED TERMINAL AIR CONDITIONER

Heating:

BOILERWT WATERTUBE BOILER

BOILHEFT HIGH EFFICIENCY MODULAR FIRETUBE BOIL.

EQ2201 GAS FIRED UNIT HEATER

EQ2263 ELECTRIC RESISTANCE HEAT WITH FAN

EQ2454 RESIDENTIAL GAS FURNACE WITH FAN

STEAMBLR STEAM BOILER

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

Misc:

EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME

EQ5020 HEATING WATER CIRCULATION PUMP

EQ5240 BOILER FORCED DRAFT FAN

HUMIDIF HUMIDIFIER

***************** TRACE 600 ANALYSIS by HUITT & ZOLLARS *********************

030185.06 EEAP BOILER-CHILLER STUDY FT. SAM HOUSTON, TEXAS CORPS. OF ENGINEERS - FORT WORTH, TX. HUITT-ZOLLARS INC. AREA 100

Weather File Code:

Location:

SAN ANTONIO, TEXAS Latitude: 29.0 (deg) Longitude: 98.0 (deg) Time Zone: 6 Elevation: 792 (ft) Barometric Pressure: 29.0 (in. Hg) Summer Clearness Number: 0.90 Winter Clearness Number: 0.90

Summer Design Dry Bulb: 97 (F) Summer Design Wet Bulb: 76 (F) Winter Design Dry Bulb: 30 (F) Summer Ground Relectance: 0.20 Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft) Air Specific Heat: 0.2444 (Btu/lbm/F)

Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F) Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft) Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November System Simulation Period: January To December Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 15:21:15 2/20/96

Dataset Name: FSH100A .TM SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1
AREA 100 EXISTING SYSTEMS

System Totals

Percent	Cool	ling Loa	d	Heatin	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(왕)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	25.9	15	668	-160,082	55	1,120	13,776.1	0	0	0.0	0	0
5 - 10	51.8	10	442	-320,164	17	349	27,552.2	0	0	0.0	0	0
10 - 15	77.7	12	518	-480,246	7	144	41,328.3	0	0	0.0	0	0
15 - 20	103.6	6	283	-640,328	4	91	55,104.4	0	0	0.0	0	0
20 - 25	129.5	6	255	-800,409	3	66	68,880.5	0	0	0.0	0	0
25 - 30	155.3	7	312	-960,492	4	73	82,656.7	0	0	0.0	0	0
30 - 35	181.2	8	344	-1,120,574	3	56	96,432.8	0	0	0.0	0	0
35 - 40	207.1	7	299	-1,280,656	3	70	110,208.9	0	0	0.0	0	0
40 - 45	233.0	7	326	-1,440,737	2	46	123,985.0	0	0	0.0	0	0
45 - 50	258.9	6	262	-1,600,819	1	30	137,761.1	0	0	0.0	0	0
50 - 55	284.8	5	216	-1,760,901	0	0	151,537.2	0	0	0.0	0	0
55 - 60	310.7	5	212	-1,920,983	0	0	165,313.3	0	0	0.0	0	0
60 - 65	336.6	3	148	-2,081,065	0	0	179,089.4	0	0	0.0	0	0
65 - 70	362.5	1	45	-2,241,147	0	0	192,865.6	0	0	0.0	0	0
70 - 75	388.4	2	86	-2,401,229	0	0	206,641.7	0	0	0.0	0	0
75 - 80	414.3	0	0	-2,561,311	0	0	220,417.7	0	0	0.0	0	0
80 - 85	440.1	0	0	-2,721,393	0	0	234,193.9	0	0	0.0	0	0
85 - 90	466.0	0	0	-2,881,475	0	0	247,970.0	0	0	0.0	0	0
90 - 95	491.9	0	0	-3,041,557	0	0	261,746.1	0	0	0.0	0	0
95 - 100	517.8	0	0	-3,201,639	0	0	275,522.2	100	8,760	0.0	0	0
Hours Off	0.0	0	4,344	0	0	6,715	0.0	0	0	0.0	0	8,760

ef	Equip					Mon	thly Con	sumption						
ım	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
0	LIGHTS													
	ELEC	74860	67694	79738	71659	77299	76537	72421	79738	71659	77299	71659	72421	892,9
	PK	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1				E UTILIT										
	CHILLD	0	0	0	0	945	914	945	945	914	945	0	0	5,
	PK	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	
2	WOME D			E UTILIT		_								
	HOTLD PK	55 0.1	49	55	53	0	0	0	0	0	0	53	55	
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
3	<i></i>	=		E UTILIT			,							
	CHILLD	0	0	0	0	982	950	982	982	950	982	0	0	5,
	PK	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	
4			BAS	E UTILIT	Y									
	HOTLD	55	49	55	53	0	0	0	0	0	0	53	55	
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 BASE CASE

Ref	Equip					Mont	hly Cons	umption						
lum	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
5			BACE	UTILITY										
Ť	CHILLD	0	0	0	0	0	0	0	0		•		_	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
6			D3.00											
٠	HOTLD	0	DASE 0	UTILITY	•	•		_						
	PK			0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
7				UTILITY										
	CHILLD	0	0	0	0	618	598	618	618	598	618	0	0	3,66
	PK	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.
8			BASE	UTILITY										
	HOTLD	45	41	45	44	0	0	0	0	0	0	44	45	26
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
9	•		BASE	UTILITY										
	CHILLD	0	0	0	0	662	641	662	662	641	662	0	0	3,9
	PK	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0
LO			BASE	UTILITY										
	HOTLD	33	30	33	32	0	0	0	0	0	0	32	33	19
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
.1			BASE	UTILITY										
	CHILLD	0	0	0	0	967	936	967	967	936	967		•	
	PK	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	5,74
L2			BACE	UTILITY										
_	HOTLD	45	41	45	44	0	0	0	0	0	•			
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	44 0.1	45 0.1	0.
L3														
	CHILLD	•		UTILITY	_									
	CHILLD PK	0.0	0.0	0.0	0.0	967 1.3	936 1.3	967 1.3	967 1.3	936 1.3	967 1.3	0.0	0.0	5,74 1
														-
4				UTILITY										
	HOTLD	45	41	45	44	0	0	0	0	0	0	44	45	2
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0
.5			BASE	UTILITY										
	CHILLD	0	0	0	0	1034	1001	1034	1034	1001	1034	0	0	6,1

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EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 BASE CASE

----- EQUIPMENT ENERGY CONSUMPTION ---------- Monthly Consumption -----Ref Equip Num Code Jan Feb Mar Apr May June July Aug Sep Dec Total 16 BASE UTILITY HOTLD 53 48 53 0 51 0 0 0 0 0 51 53 308 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 17 BASE UTILITY CHILLD 0 0 0 0 729 706 729 729 706 729 0 4,328 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 18 BASE UTILITY HOTLD 45 41 45 44 0 0 0 0 44 45 265 PK 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 19 BASE UTILITY CHILLD 0 0 0 0 1473 1426 1473 1473 1426 1473 0 0 8,744 PK 0.0 0.0 0.0 0.0 2.0 2.0 2.0 2.0 2.0 2.0 0.0 0.0 2.0 20 BASE UTILITY HOTLD 37 34 37 36 0 0 0 0 0 0 36 37 217 PΚ 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 21 BASE UTILITY HOTLD 37 34 37 36 0 0 0 0 0 0 36 37 217 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 22 BASE UTILITY CHILLD 0 0 0 0 774 749 774 774 749 774 0 0 4.593 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 23 BASE UTILITY HOTLD 41 37 41 39 0 0 0 0 0 0 39 41 237 PΚ 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 24 BASE UTILITY CHILLD 0 0 0 0 382 394 394 394 382 394 0 0 2.340 PK 0.0 0.0 0.0 0.5 0.0 0.5 0.5 0.5 0.5 0.5 0.0 0.0 0.5 25 BASE UTILITY HOTLD 15 13 15 14 0 0 0 0 0 0 14 15 85 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 26 BASE UTILITY CHILLD 0 0 0 0 536 518 536 536 518 536 0 0 3.180

				E Q	UIPM	ENT	ENEF	GY (соиви	јметі	O N			
Ref	Equip					Mont	hly Cons	umption				· 		
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
27			BASE	UTILITY										
	HOTLD	26	24	26	26	0	0	0	0	0	0	26	26	154
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28			BASE	UTILITY										
	CHILLD	0	0	0	0	82	79	82	82	79	82	0	0	486
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
29			BASE	UTILITY										
	HOTLD	6	6	6	6	0	0	0	0	0	0	6	6	37
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30			BASE	UTILITY										
	CHILLD	0	0	0	0	2232	2160	2232	2232	2160	2232	0	0	13,248
	PK	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0
31			BASE	UTILITY										
	HOTLD	92	83	92	89	0	0	0	0	0	0	89	92	535
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
							Bldgs	. 122 & 14	10 CHW E	quipment				
1	ACC2		TYPI	CAL AIR (COOLED 1	RECIP CH	ILLER							
	ELEC	0	0	0	0	15120	19579	23866	24162	16528	6334	. 0	0	105,589
	PK	0.0	0.0	0.0	0.0	53.2	59.2	63.7	62.9	53.4	38.7	0.0	0.0	63.7
1	EQ5001		CHIL	LED WATER	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
,	ACC2		ጥ ህክ 7	CAL AIR	י מש זטטט	ספרדים כיי	_	. 124 & 12	5 CHW E	quipment				
2	ELEC	0	1111	CAL AIR	0	16392	21165	25864	26109	17674	6823	0	0	114,027
	PK	0.0	0.0	0.0	0.0	58.7	65.2	69.7	68.4	58.3	42.8	1 0.0	0.0	69.7
	FK	0.0	0.0	0.0	0.0	10.7	55.2	09.7		30.3	74.0	J v.v	0.0	03.7
2	EQ5001		CHII	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	. 0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2

BACE CACE

				E Q	UIPM	1 E N T	ENE	RGY (onst	JMPTI	O N			
Ref	Fauin													
Num	Equip Code	Jan	Feb	Mar	Apr	May	June	sumption			0			
Hum	Code	Uan	reb	Mai	Mpr	мау	oune	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5300		CONT	ROL PANEI	L & INTE	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	EQ5001		CHIL	LED WATER	R PUMP -	CONST	NT VOLU	Æ						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
-	ACC2		miro T		2007 777 7			128 CHW	Equipment	t				
3	ELEC	0	0	CAL AIR (OOLED 1	GECIP CHI	O CLEE	0	0	0	•	•	•	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0
3	EQ5001		CHIL	LED WATER	R PUMP -	- CONSTA	NT VOLU	Æ.						
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5300			ROL PANEI										
	ELEC	0	0	0	0	0	0	0	0	. 0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	ACC1		TVDT	CAL AIR (מסופה ו	פרדה מנו	_	133 CHW	Equipmen	t				
7	ELEC	0	0	O O	0 0.00	11457	14617	17770	18011	12718	4872	0	0	70.446
	PK	0.0	0.0	0.0	0.0	36.9	41.7	44.8	44.4	38.3	27.1	0.0	0.0	79,446
						L							•••	11.0
4	EQ5001		CHIL	LED WATE	R PUMP -	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	833	806	833	833	806	833	0	0	4,946
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1,1	1.1	1.1	0.0	0.0	1.1
4	EQ5300 ELEC	0	CONT 0	ROL PANE	L & INTE	ERLOCKS 744	700	744	544	700				1
	PK	0.0	0.0	0.0	0.0	1.0	720	1.0	1.0	720	1.0	0.0	0.0	1.0
		0.0	0.0	0.0	0.0	1.0		134 & 135			1.0	0.0	0.0	1.0
5	ACC1		TYPI	CAL AIR	COOLED I	RECIP CH	_							
	ELEC	0	0	0	0	16477	19379	22657	23193	17739	9641	0	0	109,087
	PK	0.0	0.0	0.0	0.0	49.6	51.8	53.8	53.3	49.8	45.5	0.0	0.0	53.8
5	EQ5001			LED WATE			ANT VOLU							
	ELEC	0	0	0	0	275	266	275	275	266	275	0	0	1,634
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
_	EQ5300		CONTR	ייינגם זסם	T e T2700	EDI OCUS								
э		_		ROL PANE	ר א רו א רו א רו									
	ELEC	n	Λ	Λ.	0	711	720	711	711	720	744	_	^	
	ELEC PK	0.0	0.0	0.0	0.0	1.0	720	1.0	1.0	720	1.0	0 0.0	0.0	1.0

BASE CASE

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Dec Total Bldg. 143 CHW Equipment 6 ACC2 TYPICAL AIR COOLED RECIP CHILLER ELEC 0 0 0 0 15276 19424 23279 23889 16863 7952 0 106,683 0 PΚ 0.0 0.0 0.0 0.0 56.9 61.9 66.7 67.5 58.5 45.7 0.0 67.5 0.0 6 EQ5001 CHILLED WATER PUMP -CONSTANT VOLUME ELEC 0 0 0 0 1667 1613 1667 1667 1613 1667 0 0 9,892 PK 0.0 0.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 2.2 0.0 0.0 2.2 6 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 720 744 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 Bldg. 144 CHW Equipment 7 ACC1 TYPICAL AIR COOLED RECIP CHILLER ELEC 0 0 0 0 1496 1833 2082 2121 1802 787 0 0 10,120 PK 0.0 0.0 0.0 4.4 0.0 4.5 4.5 4.7 4.9 3.4 0.0 0.0 4.9 7 E05001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 1389 1613 1667 1667 1613 784 0 0 8,732 PK 0.0 0.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 2.2 0.0 0.0 CONTROL PANEL & INTERLOCKS 7 EQ5300 ELEC 0 0 0 0 720 720 350 0 0 3,898 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 8 ACC2 TYPICAL AIR COOLED RECIP CHILLER ELEC 0 0 0 0 11596 15650 19098 19693 12874 4913 0 0 83,823 PK 0.0 0.0 0.0 0.0 52.3 56.8 61.2 61.9 53.7 41.9 0.0 0.0 61.9 8 EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 842 1124 1319 1319 963 383 0 0 5,952 0.0 0.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 2.2 0.0 0.0 2.2 8 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 376 589 589 502 430 171 0 0 2,657 PΚ 0.0 0.0 0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 Bldg. 145 CHW Equipment 9 EQ1307 PACKAGED TERMINAL AIR CONDITIONER ELEC 0 0 0 O 6922 8920 10790 11299 7563 3261 0 0 48,756 рĸ 0.0 0.0 0.0 0.0 51.9 54.0 56.0 55.5 52.0 48.6 0.0 56.0 0.0 9 EQ5215 CONDENSER FANS-HEAT PUMP ELEC 0 0 0 0 985 1267 1850 1590 1089 0 7,225 444 0 PK 0.0 0.0 0.0 0.0 4.8 5.2 7.4 7.4 5.0 3.8 7.4 0.0 0.0

				E Q	OIPI	MENT	ENE.	RGY (CONS	UMPT:	I O N			
Ref	Equip					Mont	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
9	EQ5308		CONT	ROLS										
	ELEC	0	0	0	0	74	72	74	74	72	74	0	0	442
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
							Bldg.	146 CHW	Equipmen	t				
10	ACC1					RECIP CH	ILLER							
	ELEC	0	0	0	0	15246	19561	23652	24176	16874	7430	0	0	106,939
	PK	0.0	0.0	0.0	0.0	54.7	59.5	64.2	64.9	56.2	44.1	0.0	0.0	64.9
10	EQ5001		CHIL	LED WATER	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	833	806	833	833	806	833	0	0	4,946
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1
10	EQ5300		CONT	ROL PANEI	. & TNT'	ERI.OCKS								
	ELEC	0					720	744	744	720	744	0	0	4,416
	PK	0.0	0.0		0.0									1.0
													•••	2.0
11	ACC2		TYPI	CAL AIR	COOLED :	RECIP CH	_		on Eq	uipinent				
	ELEC	0	0	0	0	26404	31977	38339	37949	28706	12665	0	0	176,040
	PK	0.0	0.0	0.0	0.0	81.0	86.4	89.6	88.9	82.6	70.8	0.0	0.0	89.6
11	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	CONTROLS 0 0 0 0 74 72 74 74 72 74 0 0 0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0		16,472										
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
11	EQ5300		CONTR	ם מו מו מו	r. c. Tapr	EDI OCVO								
	ELEC	CONTROLS 0 0 0 0 0 74 72 74 74 74 72 74 0 0 0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1												
	PK													4,416
												0.0	0.0	1.0
12	ACC2		TYPI	CAL AIR	COOLED	RECIP CH	ILLER							
	ELEC	0	0	0	0	15672	19249	23126	23691	16723	7795	0	0	106,257
	PK	0.0	0.0	0.0	0.0	56.1	61.1	65.6	65.9	57.7	45.7	0.0	0.0	65.9
12	EQ5001		CHIL	LED WATE	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	1109	1073	1109	1109	1073	1109	0	0	6,580
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
12	EQ5300	0.0 0.0 0.0 0.0 0.0 1.1 1.1 1.1 1.1 1.1												
	ELEC	0					720	744	744	720	744	0	0	4,416
	PK													1.0
			- • •									0.0	0.0	1.0
13	EQ1113		AIR-	CLD RECI	PROCATI	NG < 15	-	->0 01111	_qp.men					
	ELEC	0						4430	4628	3232	1433	0	0	20,362

				E Q	UIPI	MENT	ENE	RGY	CONST	UMPT:	I O N			
Ref	Equip					Mon	blu Com							
Num	Code	Jan	Feb	Mar	Apr	May	June	sumption July			0			
		04	100	1101	uhr	ray	bune	ouly	Aug	Sep	Oct	Nov	Dec	Total
13	EQ5203		COND	ENSER FAN	S-AIR	CLD CHIL	LER							
	ELEC	0	0	0	0	395	488	619	609	436	184	0	0	2,731
	PK	0.0	0.0	0.0	0.0	1.7	1.8	1.8	1.8	1.8	1.4	0.0	0.0	1.8
						•								
13	EQ5001		CHIL	LED WATER	PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	833	806	833	833	806	833	0.	0	4,946
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1
13	EQ5313		CONT											
	PK	0	0	0	0	223	216	223	223	216	223	0	0	1,325
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
7.4	ACC1		TVDT	CAL AIR C	י משוטטי	DECID CU	_	199 CHW	Equipment	t .				
	ELEC	0						10103	10463	7427	2171	•	•	15.050
	PK											-		<u> </u>
											10.4	0.0	0.0	20.0
14	EQ5001		CHIL	LED WATER	PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1109	1073	1109	1109	1073	1109	0	0	6,580
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
14	EQ5300													
	ELEC						720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0					1.0	0.0	0.0	1.0
15	EQ1161		ATD .	COOLED CO	NTD COM	D - 15 m	_	127 CHW	Equipment	t				
-5	ELEC	0						2276	2206	1570	625	•		[
	РK	0.0												<u> </u>
											0.1	0.0	0.0	7.1
15	EQ5200		COND	ENSER FAN	īS									
	ELEC	0	0	0	0	140	175	222	213	149	58	0	0	956
	PK	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.4	0.0	0.0	0.6
									,					
15	EQ5303													
	ELEC	0.0 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 CONTROL PANEL & INTERLOCKS 0 0 0 0 744 720 744 744 720 744 0 0 0 4,416 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0												
	PK	0.0	0.0	0.0	0.0	0.3					0.3	0.0	0.0	0.3
16	ACC2		mint	G11 175 G			-	250 CHW	Equipment	t				
70	ELEC	n						66630	67026	F0705		_	_	<u> </u>
	PK	0 0 0 0 1109 1073 1109 1073 1109 0 0 6,580 0.0 0.0 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 CONTROL PANEL & INTERLOCKS 0 0 0 0 744 720 744 744 720 744 0 0 0 4,416 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0												
		0.5	0.0	0.0	0.0	140.8	150.4	102.3	100.0	145.0	110.5	0.0	0.0	166.0
16	EQ5001		CHIL	LED WATER	PUMP	- CONST	ANT VOLU	ME						
	ELEC	0							4166	4032	4166	n	n	24 730
	PK	0.0	0.0	0.0										
														5.0

				E (UIP	MENT	ENE	RGY (CONS	JMPT:	ION	· 		
Ref	Equip					Mon	thly Con	sumption				. 		
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
16	EQ5300		CON	TROL PANI	EL & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	. 0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
1	TYPFAN		GENI	ERIC FAN			Bldg	122 fans						
	ELEC	6101	5510	6101	5904	6101	5904	6101	6101	5904	6101	5904	6101	71,832
	PK	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
2	TYPFAN		GEN	ERIC FAN			Bldg	140 fans						
	ELEC	521	470	521	504	521	504	521	521	504	521	504	521	6,132
	PK	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
3	TYPFAN		GEN	ERIC FAN			Bldgs	s. 124 fans						
	ELEC	6101	5510	6101	5904	6101	5904	6101	6101	5904	6101	5904	6101	71,832
	PK	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
4	TYPFAN		GEN	ERIC FAN			Bldg	. 125 fans						
	ELEC	11398	10295	11398	11030	11398	11030	11398	11398	11030	11398	11030	11398	134,200
	PK	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
5	TYPFAN		CENT	EDIC EAN			Bldg.	128 fans						
_	ELEC	GENERIC FAN Bldg 140 fans 521 470 521 504 521 504 521 504 521 504 521 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7				65,700								
	PK	S21		7.5										
6	TYPFAN		GEN	ERIC FAN			Bldg.	133 fans						
	ELEC	6101			5904	6101	5904	6101	6101	5904	6101	5904	6101	71,832
	PK	8.2	8.2	8.2	8.2	8.2								8.2
7	TYPFAN		GEN	ERIC FAN			Bldg	. 134 fans						
	ELEC	12504	11294	12504	12100	12504	12100	12504	12504	12100	12504	12100	12504	147,220
	PK	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8				16.8
8	TYPFAN		GEN	ERIC FAN			Bldg.	135 fans						
	ELEC	12504				12504	12100	12504	12504	12100	12504	12100	12504	147,220
	PK	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
۵	TYPFAN		CEN	EDIC EAN			. Bldg.	143 fans						
,	ELEC	12188				12188	11795	12188	12188	11795	12188	11795	12188	143,500
	PK	 									·			16.4
10	TYPFAN		CEN	EDIC PAN	*		Bldg.	144 fans					J	
	ELEC	12864				12864	12450	12864	12864	12449	12864	12450	12864	151,469
	PK													17.3
														

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 BASE CASE

	· 			E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip		T.5											
Num	Code	Jan	Feb								Oct	Nov	Dec	Total
11	TYPFAN		GEN	ERIC FAN			Bldg. 1	45 fans						
	ELEC	5580			5400	5580	5400	5590	EEOO	E400	EE00	E400	5500	(25.500
	PK													65,700 7.5
										7.3	7.5	7.3		7.5
12	TYPFAN		GEN	ERIC FAN			Bldg. 1	46 fans						
	ELEC	5580	5040	5580	5400	5580	5400	5580	5580	5400	5580	5400	5580	65,700
	PK	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5		7.5
13	TYPFAN		GEN	ERIC FAN			Bldg.	147 fans						
	ELEC	4985			4824	4985	4824	4985	4985	4824	4985	4824	4985	58,692
	PK	6.7	6.7											6.7
14	TYPFAN		GENI	EDIC FAN		71.71								0.7
	ELEC	3698			3579	3698	3570	2600	2600	3570	2600	2570	2500	1
	PK													43,540
						3.0			3.0	3.0	3.0	5.0	5.0	5.0
15	TYPFAN		GEN	ERIC FAN			Bldg. 1	97 fans						
	ELEC	5300	4787	5300	5129	5300	5129	5300	5300	5129	5300	5129	5300	62,401
	PK	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
16	TYPFAN		GEN	ERIC FAN			Bldg.	198 fans						
	ELEC	2381			2304	2381	2304	2381	2381	2304	2381	2304	2381	28,035
	PK	3.2	3.2	3.2	3.2									3.2
17	TYPFAN		GENI	PDIC PAN			Bldg.	199 fans				-		3.0
	ELEC	1637			1584	1637	1594	1627	1627	1504	1627	1504	1622	1
	PK													19,272
											2.2	2.2		2.2
18	TYPFAN		GEN	ERIC FAN			Blag.	127 Tans						
	ELEC	2433	2198	2433	2355	2433	2355	2433	2433	2355	2433	2355	2433	28,649
	PK	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
19	TYPFAN		GEN	ERIC FAN			Bldg. 2	250 fans						
	ELEC	4166	3763	4166	4032	4166	4032	4166	4166	4032	4166	4032	4166	49,056
	PK	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
20	TYPFAN		GEN!	ERIC FAN										
	ELEC	25296	22848	25296	24480	25296	24480	25296	25296	24480	25296	24480	25296	297,840
	PK	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
1			WAT	ERTUBE BO	DILER		Bldgs.	122 & 140				-		23.0
	GAS	SS80 S040 S580 S400 S580 S400 S580 S580		1,751										
	PK													2.1
							•		•		0.0		2.0	2.1

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	O N			
Ref	Equip			·		Mont	hlv Cons	umption -						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	678	632	479	403	0	0	0	0	0	0	479	664	3,335
	PK	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
1	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	76	71	53	45	0	0	0	0	0	0	53	74	372
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
1	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	JMP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,557
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
							Bldgs.	124 & 125	HW Equi	pment		,		
2			WATE	RTUBE BO	ILER									
	GAS	452	438	112	73	0	0	0	0	0	0	130	431	1,636
	PK	1.8	1.9	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.8	1.9
2	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MР							
	ELEC	678	614	470	403	0	0	0	0	0	0	479	664	3,308
	PK	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
2	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	76	69	53	45	0	0	0	0	0	0	53	74	369
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
2	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	JMP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,557
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
3			WATE	RTUBE BO	ILER		Bldg.	128 HW E	quipment					
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	JMP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4			Early Prove	RTUBE BO	TIPD		Bidg.	133 HW E	quipment					
*	GAS	460		100		^	•	^	•	^	^	3.20	40-	<u> </u>
	PK	1.5	434		60	0	0	0	0	0	0	118	425	1,597
	t tr	1.5	1.5	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.5	1.5

		-		E Q	UIPM	ENT	ENER	RGY C	onsu	MPTI	O N			
Ref	Equip			·		Mont	hly Cons	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
4	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	мР							
	ELEC	275	249	275	266	0	0	0	0	0	0	266	275	1,607
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
4	EQ5311		BOILE	ER CONTRO	DLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
4	EQ5240		BOILE	ER FORCEI	DRAFT F	AN								
	ELEC	2775	2507	2775	2686	0	0	0	0	0	0	2686	2775	16,203
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
							Bldgs	134 & 135	HW Equip	ment				
5				RTUBE BO	ILER									
	GAS	116	102	46	45	0	0	0	0	0	0	46	106	461
	PK	1.2	1.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	1.3
5	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	MР							
	ELEC	131	117	92	89	0	0	0	0	0	0	89	130	646
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
5	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	44	39	31	30	0	0	0	0	0	0	30	44	218
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
6			พลารา	RTUBE BO	TT.ED		Bldg.	143 HW E	quipment					
•	GAS	253	258	83	60	0	0	0	0	0	0	80	226	961
	PK	1.6	1.8	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.7	1.8
6	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	JMP							
	ELEC	366	341	300	270	0	0	0	0	0	0	298	357	1,932
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
6	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	61	57	50	45	0	0	0	0	0	0	50	59	322
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
				-			Bldg.	144 HW E	quipment					
7			WATE	RTUBE BO	ILER									
	GAS	253	258	83	60	0	0	0	0	0	0	80	226	961
	PK	1.6	1.8	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.7	1.8
7	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	JMP							
	ELEC	366	341	300	270	0	0	0	0	0	0	298	357	1,932
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8

BASE CASE

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb June Apr May July Aug Sep Oct Nov Dec Total 7 EQ5311 BOILER CONTROLS ELEC 61 57 50 0 0 0 0 45 0 0 50 59 322 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1 0.0 0.1 0.1 Bldg. 145 HW Equipment ELECTRIC RESISTANCE HEAT WITH FAN 8 EQ2263 ELEC 2288 2305 532 0 0 0 0 0 812 2068 8,840 PK 13.7 14.6 9.3 1.5 0.0 0.0 0.0 0.0 0.0 0.0 8.3 13.9 14.6 Bldg. 146 HW Equipment WATERTUBE BOILER GAS 243 250 76 60 0 0 0 0 0 0 68 212 910 PK 1.6 0.0 0.0 0.0 0.0 1.8 1.0 0.2 0.0 0.0 0.9 1.7 1.8 9 E05020 HEATING WATER CIRCULATION PUMP ELEC 335 326 285 270 0 0 0 0 0 0 273 339 1,828 PK 0.8 0.8 0.8 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.8 0.8 9 EQ5311 BOILER CONTROLS ELEC 56 54 48 0 0 0 0 0 46 57 305 PK 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 Bldg. 147 HW Equipment WATERTUBE BOILER GAS 127 132 51 0 0 0 50 0 50 112 520 PK 1.3 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.2 1.3 1.4 10 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 258 186 180 0 0 0 0 0 0 180 228 1,264 PK 0.8 0.8 0.8 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.8 0.8 0.8 10 EQ5311 BOILER CONTROLS ELEC 43 39 31 0 0 0 Ω n 0 30 30 38 211 0.1 PK 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 Bldg. 149 HW Equipment 11 WATERTUBE BOILER GAS 127 132 51 50 0 0 0 0 0 0 50 112 520 PK 0.0 1.3 1.4 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.2 1.3 1.4 11 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 258 0 0 0 0 0 0 180 228 1,264 PΚ 0.8 0.8 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.8 8.0 0.8 11 EQ5311 BOILER CONTROLS ELEC 43 39 31 30 0 0 0 0 0 0 211 30 38 PΚ 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 BASE CASE

----- EQUIPMENT ENERGY CONSUMPTION ------Ref Equip Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec Total Bldg. 197 HW Equipment 12 WATERTUBE BOILER GAS 189 46 45 0 0 0 0 0 0 47 162 672 PK 1.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.4 1.4 1.5 12 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 175 180 93 90 0 0 0 0 0 0 93 170 802 0.8 PK 0.8 0.8 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.8 0.8 0.8 12 EQ5311 BOILER CONTROLS ELEC 29 30 15 0 0 0 0 0 0 15 28 134 PK 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 Bldg. 198 HW Equipment 13 WATERTUBE BOILER GAS 78 73 22 19 0 0 a 0 0 0 22 72 285 PK 0.5 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.5 0.6 13 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 165 156 106 101 n 0 0 0 0 0 804 PK 0.6 0.6 0.6 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.6 0.6 0.6 13 EQ5311 BOILER CONTROLS ELEC 37 35 24 23 0 0 0 0 0 0 38 180 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 Bldg. 199 HW Equipment 14 WATERTUBE BOILER GAS 238 230 61 35 0 0 0 0 0 0 70 228 862 PK 1.0 1.0 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.5 1.0 1.0 14 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 833 753 833 806 0 0 0 4,865 0 0 806 833 PK 1.1 1.1 1.1 1.1 0.0 0.0 0.0 0.0 0.0 0.0 1.1 1.1 1.1 14 EQ5311 BOILER CONTROLS ELEC 93 84 93 0 0 0 90 93 543 PK 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 Bldg. 127 HW Equipment 15 EQ2454 RESIDENTIAL GAS FURNACE WITH FAN GAS 38 34 9 8 0 0 0 0 0 0 11 36 136 PK 0.2 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.2 0.2 15 EQ5254 RESIDENTIAL FURNACE FAN ELEC 540 488 540 523 0 0 0 0 0 0 523 540 3,154 PK 0.7 0.7 0.7 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.7 0.7

BASE CASE

----- EQUIPMENT ENERGY CONSUMPTION-----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Total Bldg. 250 HW Equipment 16 STEAM BOILER 0 GAS 222 226 126 122 0 0 0 0 0 122 208 1,027 0.0 PK 1.8 0.3 0.3 0.0 0.0 0.0 0.0 0.0 0.3 1.8 16 EQ5311 BOILER CONTROLS ELEC 56 52 47 0 0 0 0 45 0 0 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1

030185.06 EEAP BOILER-CHILLER STUDY FT. SAM HOUSTON, TEXAS CORPS. OF ENGINEERS - FORT WORTH, TX. HUITT-ZOLLARS INC. AREA 100

Weather File Code:

 Location:
 SAN ANTONIO, TEXAS

 Latitude:
 29.0 (deg)

 Longitude:
 98.0 (deg)

 Time Zone:
 6

 Elevation:
 792 (ft)

 Barometric Pressure:
 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)

Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 10:52: 7 2/21/96 Dataset Name: FSH100B .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1 EXISTING AIRSIDE EQUIPMENT

System Totals

Percent	Cool	ing Loa	d	Heatin	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	9.7	38	2,565	-65,644	43	1,016	5,851.6	0	0	0.0	0	0
5 - 10	19.3	8	524	-131,287	19	456	11,703.2	0	0	0.0	0	0
10 - 15	29.0	8	529	-196,931	12	276	17,554.8	0	0	0.0	0	0
15 - 20	38.7	8	525	-262,574	7	158	23,406.5	0	0	0.0	0	0
20 - 25	48.3	6	379	-328,218	4	87	29,258.1	0	0	0.0	0	0
25 - 30	58.0	6	374	-393,861	3	73	35,109.7	0	0	0.0	0	0
30 - 35	67.6	5	312	-459,505	2	53	40,961.3	0	0	0.0	0	0
35 - 40	77.3	4	248	-525,148	3	71	46,812.9	0	0	0.0	0	0
40 - 45	87.0	3	234	-590,792	4	102	52,664.5	0	0	0.0	0	0
45 - 50	96.6	3	226	-656,436	2	50	58,516.1	0	0	0.0	0	0
50 - 55	106.3	3	171	-722,079	0	0	64,367.8	0	0	0.0	0	0
55 - 60	116.0	3	172	-787,723	0	0	70,219.4	0	0	0.0	0	0
60 - 65	125.6	1	86	-853,366	0	0	76,071.0	0	0	0.0	0	0
65 - 70	135.3	3	212	-919,010	0	0	81,922.6	0	0	0.0	0	0
70 - 75	145.0	1	85	-984,653	0	0	87,774.2	0	0	0.0	0	0
75 - 80	154.6	1	65	-1,050,297	0	0	93,625.8	0	0	0.0	0	0
80 - 85	164.3	1	86	-1,115,941	0	0	99,477.4	0	0	0.0	0	0
85 - 90	173.9	0	0	-1,181,584	0	0	105,329.0	0	0	0.0	. 0	0
90 - 95	183.6	0	0	-1,247,228	0	0	111,180.7	0	0	0.0	0	0
95 - 100	193.3	0	0	-1,312,871	0	0	117,032.3	100	8,760	0.0	0	0
Hours Off	0.0	0	1,967	0	0	6,418	0.0	0	0	0.0	0	8,760

E	Equip -					Mon	thly Con	sumption						
n	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
)	LIGHTS													
	ELEC	21140	19120	22758	20197	21949	21815	20331	22758	20197	21949	20197	20331	252,7
	PK	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113
ı	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
2	MISC LD								•					
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	P CHILL	0	. 0	0	0	0	0	0	0	0	0	0	0	
	PK .	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
L				E UTILIT										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	HOW! D			E UTILIT		•	•		•		•	_		
	HOTLD PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	179	173	179	179	173	179	0	0	1,
	PK	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	1,
1			BAS	E UTILIT	Y									
	HOTLD	20	18	20	20	0	0	0	0	0	0	20	20	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Ref	Equip					Mont	hly Cons	umption -				 -		
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5			BASE	UTILITY										
	CHILLD	0	0	0	0	707	684	707	707	684	707	0	0	4,195
	PK	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0.9
6			BASE	UTILITY										
	HOTLD	42	38	42	41	0	0	0	0	0	0	41	42	245
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
7			BASE	UTILITY										
	CHILLD	0	0	0	0	870	842	870	870	842	870	0	0	5,16
	PK	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	1.:
8			BASE	UTILITY										
	HOTLD	42	38	42	41	0	0	0	0	0	0	41	42	24
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
9			BASE	UTILITY										
	CHILLD	0	0	0	0	848	821	848	848	821	848	0	0	5,03
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.
10			BASE	UTILITY										
	HOTLD	29	26	29	28	0	0	0	0	0	0	28	29	16
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
11			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
12			BASE	UTILITY										
	HOTLD	4	4	4	4	0	0	0	0	0	0	4	4	2
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
13			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK ·	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
14			BASE	UTILITY										
	HOTLD	7	7	7	7	0	0	0	0	0	0	7	7	4
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
15			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ------ Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec Total BASE UTILITY 7 7 7 7 HOTLD 0 0 0 0 0 7 0 7 43 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 17 BASE UTILITY CHILLD 0 0 0 0 0 0 0 0 0 0 0 0 PΚ 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY HOTLD 4 4 4 0 0 0 0 0 0 4 4 22 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY 19 CHILLD 0 0 0 0 45 43 45 45 43 45 0 0 265 PΚ 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.1 20 BASE UTILITY HOTLD 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY HOTLD 21 19 21 20 0 0 0 0 0 0 20 21 122 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 23 BASE UTILITY CHILLD 0 0 0 0 335 324 335 335 324 0 335 0 1,987 PK 0.0 0.0 0.0 0.0 0.4 0.4 0.4 0.4 0.4 0.4 0.0 0.0 0.4 BASE UTILITY 24 HOTLD 15 13 15 14 0 0 0 0 0 0 14 15 87 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 25 BASE UTILITY CHILLD 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY HOTLD 16 16 15 14 0 0 0 0 0 0 15 16 91 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

				E Q	UIPM	ENT	ENER	RGY (consu	JMPT1	ON			
Ref	Equip				- 	Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
27			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28			BASE	UTILITY										
	HOTLD	6	5	6	6	0	0	0	0	0	0	6	6	35
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29			BASE	UTILITY										
1	CHILLD	0	0	0	0	74	72	74	74	72	74	0	0	442
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
30			BASE	UTILITY										
	HOTLD	12	11	12	12	0	0	0	0	0	0	12	12	70
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
					•••	•.•	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31			BASE	UTILITY										
	CHILLD	0	0	0	0	223	216	223	223	216	223	0	0	1,325
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
32				UTILITY										
	HOTLD	22	19	22	21	0	0	0	0	0	0	21	22	126
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E01112						_	142 CHW	Equipment					
1	EQ1113			CLD RECI										
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	EQ5203		COND	enser fai	NS-AIR C	LD CHILI	ER							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	EQ5001		CHIL	LED WATER	R PUMP -	CONSTA	NT VOLUM	1E						
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
1	EQ5313		CONT	ROLS										
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
_	E01120-								Equipmen	t				
2	EQ1132L	_		R COOLED										<u> </u>
	ELEC	0	0	0	0	5575	6322	7273	7433	6087	1797	0	0	34,487
	PK	0.0	0.0	0.0	0.0	13.1	13.3	14.1	14.5	13.4	10.2	0.0	0.0	14.5

				E Q	UIPN	1 E N T	ENE	RGY (const	им рті	O N			
Ref	Equip					Mont	hlv Cons	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5100		COOL	ING TOWE	PANS									
_	ELEC	0	0	0	0	1109	1073	1109	1109	1073	422	0	0	5,893
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
				• • • • • • • • • • • • • • • • • • • •	•••							0.0	0.0	1.5
2	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	20	23	26	27	22	7	0	0	125
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
2	EQ5011		COND	ENSER WA	TER PUMI	P-CV (MED:	IUM EFFI	2.)						
	ELEC	0	0	.0	0	1637	1584	1637	1637	1584	1014	0	0	9,093
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
						<u> </u>							0.0	2.2
2	EQ5302		CONT	ROLS										
	ELEC	0	0	0	0	74	72	74	74	72	46	0	0	413
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
_														
2	HUMIDIF	·		DIFIER										
	ELEC PK	0	0	0	0	680	644	720	661	684	608	0	0	3,997
	PK	0.0	0.0	0.0	0.0	6.0	6.0	6.0	6.0	6.0	6.0	0.0	0.0	6.0
2	ACC1		דמעיד	CAL AIR	משומס	PCID CU	_	126 CHW	Equipmen	t				
,	ELEC .	0	0	0	0 001000	12680	15777	19087	19207	13564	5886	0	0	06.201
	PK	0.0	0.0	0.0	0.0	40.4	43.8	47.1	47.9	43.3	35.0	0.0	0.0	86,201 47.9
		***	0.0	0.0	0.0	10.4	43.0	47.1	47.5	43.3		0.0	0.0	47.9
3	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1109	1073	1109	1109	1073	1109	0	0	6,580
	ÞΚ	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
3	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
								131 CHW						
4	ACC1		TYPI	CAL AIR	COOLED 1	RECIP CH			• •					
	ELEC	0	0	0	0	10394	12600	15078	15213	11078	5153	0	0	69,516
	PK	0.0	0.0	0.0	0.0	32.7	35.7	38.3	38.2	35.4	27.8	0.0	0.0	38.3
4	EQ5001		CHIL	LED WATE	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
									,					
4	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

				E Q	n i.b v	ENT	ENE	RGY (onst	JMPTI	0 N			
Ref	Equip					Mont	hlu Con	aumntion						
	Code	Jan	Feb	Mar	Apr	May	June	July		•	0-4			
		04.1	100	PICE	Apr	Hay		_	Aug	Sep	Oct	Nov	Dec	Total
5	ACC1		TYPT	CAL ATR	COOLED E	RECIP CHI	_	29 CHW E	quipment					
-	ELEC	0	0	0	0 0.000	2292	2222	2115	2202	2297	2222	•	•	[]
	PK	0.0	0.0	0.0	0.0	4.9	5.2	5.7	5.9	5.6	2222	0	0	13,350
				0.0	0.0	1.7	3.2	3.7	3.9	5.6	4.9	0.0	0.0	5.9
5	EQ5001		CHIL	LED WATE	- פאווים א	- CONST	ANT VOLU	vit.						
	ELEC	0	0	0	0	0	0	0.	0	0	0	0	0	•
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	EQ5300		CONT	ROL PANE	L & INTE	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
												•••	5.0	1.0
6	ACC1		TYPI	CAL AIR	COOLED F	RECIP CH	LLER							
	ELEC	0	0	0	0	10152	12916	15948	15888	11122	6240	0	0	72,266
	PK	0.0	0.0	0.0	0.0	36.7	39.3	42.8	44.3	42.0	37.1	0.0	0.0	44.3
6	EQ5001		CHIL	LED WATE	R PUMP -	CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1107	1428	1771	1726	1214	621	0	0	7,866
	PK	0.0	0.0	0.0	0.0	2.4	2.4	2.4	2.4	2.4	2.4	0.0	0.0	2.4
6	EQ5300		CONT	ROL PANE	L & INTE	ERLOCKS								
	ELEC	0	0	0	0	465	600	744	725	510	261	0	0	3,305
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
							Bldg.	151 CHW	Equipmen	t				
7	EQ1307		PACK	AGED TER	MINAL A	R CONDI	TIONER							
	ELEC	0	0	75	305	738	1001	1254	1256	826	181	48	0	5,685
	PK	3.6	3.6	3.6	3.7	4.0	4.1	4.3	4.2	4.0	3.7	3.6	3.6	4.3
_														
7	EQ5215			ENSER FA										
	ELEC	0	0	9	40	93	126	173	158	105	24	6	0	733
	PK	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.2	0.1	0.5
7	EQ5308		CONTR	DOI O										
,	ELEC	0	CONT		20									
	PK	0.1	0.1	11	32	74	72	74	74	72	17	7	0	434
	PK	1 0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ω	E01307		חאכע	ACED TED	MTNINE 3:	. D. GOMBA	_	154 CHW	Equipmen	ıt				
0	EQ1307 ELEC	0	PACK 0	AGED TER 40	303	IR CONDIT		1670	1744	1000	1.60		_	
	PK	7.0	7.0			874	1281	1679	1744	1078	168	29	0	7,197
	110	_ ′.0	7.0	7.0	7.3	7.7	8.1	8.3	8.3	7.8	7.3	7.0	7.0	8.3
8	EQ5215		CONTO	ENSER FA	MG_BEVW	DIMP								
3	ELEC	0	0	enser fa 5	NS-HEAT 41	113	164	264	222	147	22	_	•	
	PK	0.1	0.0	0.2	0.4	0.5	0.6	1.0	1.0	0.6	23	3	0	978
		L * · · ·			J.4	0.5		1.0	1.0	0.6	0.3	0.2	0.1	1.0

				E Q	UIPM	ENT	ENER	GY C	onsu	мрті	0 N			
Do.f	Emin						1.1 2							
Ref Num	Equip Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
8	EQ5308		CONT	ROLS										
	ELEC	0	0	5	20	54	72	74	74	63	13	4	0	379
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
							Bldg. 1:	56 CHW E	quipment					
9	EQ1307		PACK	AGED TER	MINAL AI	R CONDIT	IONER							
	ELEC	0	0	0	238	845	1285	1721	1781	1074	110	0	0	7,055
	PK	0.0	0.0	13.1	13.8	14.6	15.2	15.8	15.7	14.7	13.7	13.1	0.0	15.8
9	EQ5215		COND	ENSER FA	NS-HEAT	PUMP								
	ELEC	0	0	0	30	104	156	333	215	133	14	0	0	986
	PK	0.0	0.0	0.2	0.3	0.5	0.5	1.8	1.8	0.5	0.3	0.2	0.0	1.8
9	EQ5308		CONT	ROLS										
	ELEC	0	0	0	18	49	72	74	74	60	11	0	0	358
	PK	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
		.					Bldg.	157 CHW	Equipment					
10	EQ1307		PACK	AGED TER	MINAL AI	R CONDIT	CIONER							
	ELEC	31 •	18	221	427	831	1027	1211	1208	842	357	161	24	6,357
	PK	3.1	3.1	3.1	3.3	3.5	3.6	3.8	3.7	3.5	3.3	3.1	3.1	3.8
10	EQ5215		COND	ENSER FA	NS-HEAT	PUMP								
	ELEC	. 3	2	26	60	113	142	178	167	118	47	19	2	876
	PK	0.1	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.1	0.5
10	EQ5308		CONT	ROLS										
	ELEC	6	4	20	47	74	72	74	74	72	52	15	2	514
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		<u> </u>					Bldg.	159 CHW	Equipment					
11	EQ1113		AIR-	CLD RECI	PROCATIN	NG < 15 1	CONS							
	ELEC	0	0	0	0	1646	1847	2143	2097	1674	1068	0	0	10,476
	PK	0.0	0.0	0.0	0.0	3.6	3.7	3.8	3.8	3.4	2.3	0.0	0.0	3.8
11	EQ5203		CONE	ENSER FA	NS-AIR C	LD CHILI	LER							
	ELEC	0	0	0	0	232	269	316	308	246	130	0	0	1,501
	PK	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.4	0.0	0.0	0.5
				•								-		
11	EQ5001			LED WATE			ANT AOTON	4E						
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	EQ5313		CONT	ROLS										
	ELEC	0	0	0	0	223	216	223	223	216	223	0	0	1,325
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
												-		

			 -	E Q	UIPM	ENT	ENER	GY C	onsu	меті	O N		·	
Ref	Equip -					Mont	hly Cons	umntion						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
								52 CHW E	_	CCP	000	NOV	Dec	Total
12	EQ1307		PACK	AGED TER	MINAL AI	R CONDIT	_	DZ CITTI L	quipinent					
	ELEC	0	0	92	687	2330	3262	4250	4300	2707	675	101	0	18,405
	PK	11.9	11.9	11.9	12.4	13.2	13.8	14.3	14.1	13.2	12.4	11.9	11.9	14.3
12	EQ5215		COND	ENSER FA	NS-HEAT	PUMP								
	ELEC	0	0	13	104	338	471	670	619	397	90	13	0	2,716
	PK	0.3	0.3	0.8	1.2	1.6	1.8	1.9	1.9	1.7	1.2	0.8	0.4	1.9
	H05300													
12	EQ5308 ELEC	•		ROLS										· · · · · · · · · · · · · · · · · · ·
	PK	0.1	0.1	0.1	0.1	74	72	74	74	72	74	8	0	484
	I K	L-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
13	EQ1113		AIR-	CLD RECI	PROCATIN	IG < 15 T		155 CHW	Equipment	į				
	ELEC	360	262	892	1301	2662	3575	4321	4056	3024	945	638	299	22,335
	PK	8.2	8.3	6.6	6.4	8.1	10.0	9.9	9.3	9.0	7.8	7.8	8.3	10.0
								*						20.0
13	EQ5203		COND	ENSER FA	NS-AIR C	LD CHILI	ER							
	ELEC	24	16	77	139	275	370	487	423	318	98	56	21	2,305
	PK	0.6	0.4	0.7	0.7	0.8	1.0	1.0	1.0	0.9	0.8	0.7	0.5	1.0
	ECC.													
13	EQ5001 ELEC	47		LED WATE			NT VOLUM							,
	PK	0.6	0.6	0.6	0.6	399 0.6	403	417	417	403	138	94	43	2,719
		0.0	0.0	0.0		- 0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
13	EQ5313		CONT	ROLS										
	ELEC	25	23	61	108	214	216	223	223	216	74	50	23	1,457
	PK	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
14	EQ1307		PACK	AGED TER	MINAL AI	R CONDIT	TIONER							
	ELEC	249	218	759	1348	2044	2323	2622	2928	1869	1096	603	235	16,295
	PK	14.2	14.2	14.2	14.9	15.8	16.5	17.1	17.0	15.9	14.9	14.2	14.2	17.1
14	FOESTE		CONTR	DVGED EN										
14	EQ5215 ELEC	20	16	ENSER FA 81										
	PK	0.6	0.5	1,1	173	1.6	1.7	2.0	2.0	239	135	65	20	2,065
		<u> </u>			1.7	1.0	1./	2.0	2.0	1.7	1.3	1.1	0.6	2.0
14	EQ5308		CONT	ROLS										
	ELEC	4	4	11	18	24	25	28	31	20	15	9	4	193
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
							Bldg.	58 CHW I						
15	EQ1307		PACK	AGED TER	MINAL AI	R CONDIT			• •					
	ELEC	0	0	235	896	2237	3069	3846	3844	2466	621	158	0	17,371
	PK	9.5	9.5	9.5	9.9	10.6	11.0	11.4	11.3	10.6	9.9	9.5	9.5	11.4

				E Q	UIPM	ENT	ENER	GY C	оиѕи	мрті	O N			
Ref	Equip -					Mont	hlu Cana							
Num	Code -	Jan	Feb	Mar	Anr	Mont May	-	-			005		D	m . 1
Ivani	code	oan	reb	nai	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
15	EQ5215		COND	ENSER FA	NS-HEAT I	PUMP								
	ELEC	0	0	28	118	281	386	505	483	315	79	18	0	2,214
	PK	0.3	0.2	0.7	1.0	1.3	1.3	1.3	1.3	1.3	0.9	0.6	0.3	1.3
15	EQ5308		CONT	ROLS										
	ELEC	0	0	11	28	68	72	74	74	72	44	6	0	450
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
								141 CHW I	Equipment					
16	EQ1307				MINAL AI	R CONDIT	IONER							
	ELEC	18	6	168	433	1098	1372	1670	1672	1175	517	110	8	8,248
	PK	3.1	3.1	3.1	3.3	3.5	3.6	3.8	3.7	3.5	3.3	3.1	3.1	3.8
16	EQ5215		CONTO	DNOED EX	NS-HEAT	DIRED								
10	ELEC	2	0	ENSER FA 21	NS-HEAT . 62	150	100	233	221	164	66	14	-	<u> </u>
	PK	0.1	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.1	1,133
							0.5		0.5	0.5	0.4	0.3	<u> </u>	0.5
16	EQ5308		CONT	ROLS										
	ELEC	2	2	16	34	74	72	74	74	72	74	14	2	512
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
							Bldgs.	260 & 261	CHW Equ	ipment				
17	ACC1		TYPI	CAL AIR	COOLED R	ECIP CHI	LLER							-
	ELEC	0	0	. 0	0	5375	6618	7835	7706	5316	2234	0	0	35,084
	PK	0.0	0.0	0.0	0.0	18.3	19.9	21.1	20.9	18.3	14.6	0.0	0.0	21.1
17	EQ5001		OUT	THE WARR	D DIMID	COMO		-						
17	ELEC	0	O	LED WATE 0	R PUMP - 0	264	NT VOLUM 266		225	266	00	•		[]
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	98 0.4	0.0	0.0	0.4
				•••	• • • •		0.1							0.4
17	EQ5300											0.0		
			CONT	ROL PANE	L & INTE	RLOCKS						0.0		
	ELEC	0	CONT 0	ROL PANE	L & INTE	RLOCKS 713	720	744	744	720	265	0	0	3,906
	ELEC PK	0.0					720 1.0							3,906
			0	0	0	713		744	744	720	265	0	0	
17	PK EQ5001	0.0	0.0	0	0.0	713		744	744	720	265	0	0	
17	PK EQ5001 ELEC	0.0	0 0.0 CHII 0	0 0.0 LED WATE 0	0 0.0 R PUMP - 0	713 1.0 CONSTA	1.0	744	744	720	265	0	0	
17	PK EQ5001	0.0	0 0.0 CHIL	0 0.0 LED WATE	0 0.0 R PUMP -	713 1.0 CONSTA	1.0 ANT VOLUM 266 0.4	744 1.0 4E 275 0.4	744 1.0 275 0.4	720 1.0 266 0.4	265 1.0	0	0	1.0
	PK EQ5001 ELEC PK	0.0	0 0.0 CHII 0 0.0	0 0.0 LED WATE 0 0.0	0 0.0 R PUMP - 0 0.0	713 1.0 CONSTA 264 0.4	1.0 ANT VOLUM 266 0.4 Bldg. 2	744 1.0 4E 275 0.4	744 1.0 275	720 1.0 266 0.4	265 1.0	0 0.0	0 0.0	1.0
	PK EQ5001 ELEC PK ACC1	0.0	0 0.0 CHII 0 0.0	0 0.0 LED WATE 0 0.0	0 0.0 R PUMP - 0 0.0	713 1.0 CONSTA 264 0.4 ECIP CHI	1.0 ANT VOLUM 266 0.4 Bldg. 2	744 1.0 ME 275 0.4 268 CHW	744 1.0 275 0.4 Equipment	720 1.0 266 0.4	265 1.0 98 0.4	0 0.0 0	0 0.0	1,445
	PK EQ5001 ELEC PK ACC1 ELEC	0.0	0 0.0 CHII 0 0.0 TYPI 409	0 0.0 LED WATE 0 0.0 CAL AIR 1372	0 0.0 R PUMP - 0 0.0 COOLED R 2728	713 1.0 CONSTR 264 0.4 ECIP CHI 5972	1.0 ANT VOLUM 266 0.4 Bldg. 2 ELLER 7850	744 1.0 ME 275 0.4 268 CHW 1	744 1.0 275 0.4 Equipment	720 1.0 266 0.4	265 1.0 98 0.4	0 0.0	0 0.0 0 0.0	1.0 1,445 0.4
	PK EQ5001 ELEC PK ACC1	0.0	0 0.0 CHII 0 0.0	0 0.0 LED WATE 0 0.0	0 0.0 R PUMP - 0 0.0	713 1.0 CONSTA 264 0.4 ECIP CHI	1.0 ANT VOLUM 266 0.4 Bldg. 2	744 1.0 ME 275 0.4 268 CHW	744 1.0 275 0.4 Equipment	720 1.0 266 0.4	265 1.0 98 0.4	0 0.0 0	0 0.0	1,445
18	PK EQ5001 ELEC PK ACC1 ELEC	0.0	0 0.0 CHII 0 0.0 TYPI 409	0 0.0 LED WATE 0 0.0 CAL AIR 1372	0 0.0 R PUMP - 0 0.0 COOLED R 2728 15.9	713 1.0 CONSTR 264 0.4 ECIP CH1 5972 19.2	1.0 ANT VOLUM 266 0.4 Bldg. 2 ELLER 7850	744 1.0 4E 275 0.4 268 CHW) 9472 22.9	744 1.0 275 0.4 Equipment	720 1.0 266 0.4	265 1.0 98 0.4	0 0.0	0 0.0 0 0.0	1.0 1,445 0.4
18	PK EQ5001 ELEC PK ACC1 ELEC PK	0.0	0 0.0 CHII 0 0.0 TYPI 409	0 0.0 LED WATE 0 0.0 CAL AIR 1372	0 0.0 R PUMP - 0 0.0 COOLED R 2728	713 1.0 CONSTR 264 0.4 ECIP CH1 5972 19.2	1.0 ANT VOLUM 266 0.4 Bldg 2 LLER 7850 21.3	744 1.0 4E 275 0.4 268 CHW 1 9472 22.9	744 1.0 275 0.4 Equipment 9626 23.2	720 1.0 266 0.4 6686 20.0	265 1.0 98 0.4 1978 14.8	0 0.0 0 0.0	0 0.0 0 0.0 514 11.3	1.0 1,445 0.4 48,278 23.2
18	PK EQ5001 ELEC PK ACC1 ELEC PK EQ5001	0.0 0.0 527	0 0.0 CHII 0 0 0.0 TYPI 409 11.3 CHII	0 0.0 LED WATE 0 0.0 CAL AIR 1372 13.3	0 0.0 R PUMP - 0 0.0 COOLED R 2728 15.9 R PUMP -	713 1.0 CONSTF 264 0.4 ECIP CHI 5972 19.2 CONSTF	1.0 ANT VOLUM 266 0.4 Bldg.2 CLLER 7850 21.3	744 1.0 4E 275 0.4 268 CHW) 9472 22.9	744 1.0 275 0.4 Equipment	720 1.0 266 0.4	265 1.0 98 0.4	0 0.0	0 0.0 0 0.0	1.0 1,445 0.4

ef	Equip													
ım	Code	Jan	Feb			Moni								
	2040	oan	reb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
8	EQ5300		CON	TROL PAN	ZI. S. TAIT	EDI OCKC								
	ELEC	198	195	254	360	611	720	744						
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	744	720	296	278	203	5,32
									1.0	1.0	1.0	1.0	1.0	1.
1	TYPFAN		GENE	ERIC FAN			Bidg.	142 fans						
	ELEC	3685	3328	3685	3566	3685	3566	3685	3685	3566	3685	3566	2605	
	PK	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3685 5.0	43,38
							Bldg	123 fans			3.0	3.0	3.0	5.
2	TYPFAN		GENE	ERIC FAN			Diug.	123 14113						
	ELEC	1786	1613	1786	1728	1786	1728	1786	1786	1728	1786	1728	1786	21,02
	PK	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	21,02
2	munn:						Bldg.	126 fans						2.
3	TYPFAN			RIC FAN			.	-						
	ELEC PK	2753	2486	2753	2664	2753	2664	2753	2753	2664	2753	2664	2753	32,41
	FK	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.
4	TYPFAN		CENE	RIC FAN			Bldg.	131 fans						
	ELEC	8333	7526	8333	8064	0222	2054							
	PK	11.2	11.2	11.2	11.2	8333	11.2	8333	8333	8064	8333	8064	8333	98,11
						11.2		11.2	11.2	11.2	11.2	11.2	11.2	11.:
5	TYPFAN		GENE	RIC FAN			Bldg. 1	129 fans						
	ELEC	9970	9005	9970	9648	9970	9648	9970	9970	9648	9970	9648	0070	1
	PK	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	9970	117,384
							Bldg. 1	51 fans				13.4	13.4	13.4
6	TYPFAN		GENE	RIC FAN			2145.							
	ELEC	1257	1135	1257	1216	1257	1216	1257	1257	1216	1257	1216	1257	14,795
	ÞK	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
7	TYPFAN		ADV	DT0			Bldg. 1	54 fans						
•	ELEC	1058	GENE	RIC FAN	1004									
	PK	1.4	1.4	1.4	1.4	1058	1024	1058	1058	1024	1058	1024	1058	12,463
				1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
8	TYPFAN		GENE	RIC FAN			Bldg. 1	56 fans						
	ELEC	895	809	895	866	895	866	895	895	9.5.6	005			
	PK	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	895 1.2	866	895	10,540
										1.4	1.2	1.2	1.2	1.2
)	TYPFAN		GENE	RIC FAN			Bldg. I	57 fans						
	ELEC	1946	1758	1946	1883	1946	1883	1946	1946	1883	1946	1883	1946	22 014
	PK	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	22,914
							Bldg. 1	59 fans						2.0
	TYPFAN			RIC FAN			J							
	ELEC	1753	1584	1753	1697	1753	1697	1753	1753	1697	1753	1697	1753	20,644
	PK	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

£	Equip					Mont	hly Cons	umption						
ım	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
_							Bldg. 15	2 fans						
11	TYPFAN			RIC FAN										r
	ELEC	3734	3373	3734	3614	3734	3614	3734	3734	3614	3734	3614	3734	43,
	PK	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
12	TYPFAN		GENE	RIC FAN			Bldg. 1	55 fans						
	ELEC	8017	7241	8017	7758	8017	7758	8017	8017	7758	8017	7758	8017	94,
	PK	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	1
							Bldg. 1	58 fans					····	
13	TYPFAN		GENE	RIC FAN										
	ELEC	4120	3722	4120	3988	4120	3988	4120	4120	3988	4120	3988	4120	48,
	PK	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
							Bldg. 1	41 fans						
14	TYPFAN ELEC	1898	GENE 1714	RIC FAN 1898	1836	1898	1836	1898	1898	1836	1898	1836	1898	22,
	PK	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	22,
	110	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	2.0	
15	TYPFAN		GENE	RIC FAN			Bldg. 2	260 fans						
	ELEC	521	470	521	504	521	504	521	521	504	521	504	521	6,
	PK	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	<u> </u>
							Bldg.	261 fans						
16	TYPFAN			ERIC FAN										
	ELEC	521	470	521	504	521	504	521	521	504	521	504	521	6,
	PK	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
17	TYPFAN		GENE	ERIC FAN			Bldg.	268 fans						
	ELEC	4687	4234	4687	4536	4687	4536	4687	4687	4536	4687	4536	4687	55,
	PK	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	
		<u> </u>						142 HW E						
1			WATE	ERTUBE BO	DILER		2148							
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1	EQ5020		HEAT	TING WATE	ER CIRCUL	ATION PI	IMP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ł
														
1	EQ5311			LER CONTE										
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	<u> </u>
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
•	E02201		<i>a</i> . <i>a</i>	EIDEN '		ייי	Bldg.	123 HW E	quipment					
2	~	***			NIT HEATE		•	^	•		•	•	100	Γ
	GAS	118	115	29	28	0	0	0	0	0	0	28	109	L
	PK	0.7	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	

				E Q	UIPMI	ENT	ENER	GY C	оиѕи	меті	0 N			
Ref	Equip -					V	- h 1							
	Code	Jan	Feb	Mar	Apr	Mont May	thly Cons June	July					D	
214	0000	ou.	102	Plat	vħī	May	oune	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5250		UNIT	HEATER I	FAN									
	ELEC	75	69	62	60	0	0	0	0	0	0	60	75	403
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
							Bldg.	126 HW E	uipment					
3			WATE	RTUBE BO	ILER									
	GAS	250	238	66	56	0	0	0	0	0	0	81	246	937
	PK	1.4	1.5	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.4	1.5
,														
3	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	MP							
	ELEC	273	258	195	180	0	0	0	0	0	0	199	274	1,379
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
,	POE311													
3	EQ5311 ELEC	46		ER CONTRO			_	_						
	PK	0.1	0.1	0.1	0.1	0.0	0	0	0	0	0	33	46	230
	I K	0.1	0.1		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
4			WATE	RTUBE BO	ILER		Bidg.	131 HW E	luipment					
	GAS	268	255	63	51	0	0	0	0	0	0	78	264	979
	PK	1.3	1.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.3	1.4
	•													
4	EQ5020		HEAT	ING WATE	R CIRCULA	TION PO	JMP							
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2,433
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
4	EQ5311			ER CONTRO										<u></u>
	ELEC PK	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
4	EQ5020		HEAT	ING WATE	R CIRCULA	ים א∩זיד	TMD							
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2 422
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	2,433
		L						129 HW E			0.0		- 0.0	0.0
5			WATE	RTUBE BO	ILER		Diag.		anpinone					
	GAS	98	95	41	39	0	0	0	0	0	0	39	87	399
	PK	1.0	1.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	1.1
5	EQ5020				R CIRCULA	TION PO	ЈМР							-
	ELEC	1771	1599	1771	1714	0	0	0	0	0	0	1714	1771	10,339
	PK	2.4	2.4	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4
_														
5	EQ5311			ER CONTRO										
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

Fig.					Е С	UIPM	ENT	ENEI	RGY (const	JMPT	I O N			
Note Gode Jan Pob Mar Apr Nay June July Aug Sep Oct Nov Dec Total	Ref	Equip					Mon	thly Cons	sumption						
Bidg. 151 HW Equipment Bidg. 152 HW Equipment Bidg. 153 HW Equipm	Num	Code	Jan	Feb								Oct	Nov	Dec	M-+-1
ELEC 197 808 143 127 0 0 0 0 0 0 180 791 2.866 PK 3.4 3.4 1.3 0.2 0.0 0.0 0.0 0.0 0.0 1.5 3.4 3.4 3.4 1.3 0.2 0.0 0.0 0.0 0.0 0.0 1.5 3.4 FELECTRIC RESISTANCE HEAT WITH FAN ELEC 1733 1708 389 211 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0								Bldg. 1	-	-		•••	1104	Dec	TOTAL
PK	6	EQ2263		ELEC	TRIC RES	ISTANCE I	HEAT WI	TH FAN	51 IIII Eq	_l uipinent					
PK			817	808	143	127	0	0	0	0	0	0	180	791	2 856
Bidg. 154 HW Equipment Bidg. 154 HW Equipment Bidg. 154 HW Equipment Bidg. 157 HW Equipment Bidg. 157 HW Equipment Bidg. 156 HW Equipment Bidg. 157 HW Equipment Bidg. 158 HW Equipment Bidg. 158 HW Equipment Bidg. 158 HW Equipment Bidg. 158 HW Equipment Bidg. 159 HW Equipm		PK	3.4	3.6	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.5		<u> </u>
ELEC 1753 1708 389 211 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									154 HW E	quipment			<u> </u>		3.0
FX	7					ISTANCE H	HEAT WI	TH FAN							
Section Sect							0	0	0	0	0	9	458	1676	6,203
GAS 95 93 19 10 0 0 0 0 0 0 0 0 22 91 330 PK 0.3 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.3 B EGS020		PK	5.4	5.8	3.0	0.3	0.0				0.0	0.7	2.8	5.5	5.8
GAS 95 93 19 10 0 0 0 0 0 0 0 22 91 330 PK 0.3 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.3 0.3 8 EQ5020	ρ							Bldg. 1	56 HW Eq	uipment					
FK 0.3 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.3 0.3 8 EQ5020	·	SAS.	٥٤				_								
8 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 107 100 55 46 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0												0	22	91	330
ELEC 107 100 55 46 0 0 0 0 0 0 0 0 59 108 475		•••	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3
ELEC 107 100 55 46 0 0 0 0 0 0 0 0 59 108 475	8	EQ5020		неат	ING WATE	p CTDCima	TON DE	THE							
PK 0.2 0.2 0.2 0.2 0.2 0.2 0.0			107								_				
8 EQ5311 BOILER CONTROLS ELEC 70 66 37 30 0 0 0 0 0 0 0 0 0 0 0 1 39 71 313 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0		PK	r												475
ELEC 70 66 37 30 0 0 0 0 0 0 0 0 39 71 313 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0			<u> </u>			<u> </u>	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
ELEC 70 66 37 30 0 0 0 0 0 0 0 0 39 71 313 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0	8	EQ5311		BOIL	ER CONTR	OLS									
PK		ELEC	70				0	0	o	0	٥	٥	20	21	r
Bldg. 157 HW Equipment Bldg. 157 HW Equipment		PK	0.1	0.1	0.1	0.1	0.0	0.0							
GAS 36 35 8 8 0 0 0 0 0 0 0 8 37 131 131 PK 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0								Bldg. 1			0.0	0.0	0.1	0.1	0.1
PK 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	9			GAS 1	FIRED UN	IT HEATER	1								
PK 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			36	35	8	8	0	0	0	0	0	0	8	37	131
9 EQ5250 UNIT HEATER FAN ELEC 15 13 15 14 0 0 0 0 0 0 0 14 15 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		PK	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
ELEC 15 13 15 14 0 0 0 0 0 0 0 0 14 15 87 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.															
FK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.															
Bldg. 159 HW Equipment 10 EQ2201 GAS FIRED UNIT HEATER GAS										0	0	0	14	15	87
GAS FIRED UNIT HEATER GAS		FK	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0
GAS	10	E02201		GNS I	מאו מססד	TT TTEMPE		Bldg. 1	.59 HW Eq	luipment					
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			0												
10 EQ5250															0
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ELEC	10	EQ5250		UNIT	HEATER E	AN									
PK		ELEC	0				0	0	0	0	0	•	_		
Bldg. 152 HW Equipment 11 EQ2201 GAS FIRED UNIT HEATER GAS 247 244 64 28 0 0 0 0 0 0 69 241 892 PK 0.7 0.8 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.4 0.7 0.8 11 EQ5250 UNIT HEATER FAN ELEC 103 93 103 99 0 0 0 0 0 0 99 103 599 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0		PK	0.0	0.0	0.0										L
11 EQ2201 GAS FIRED UNIT HEATER GAS 247 244 64 28 0 0 0 0 0 0 69 241 892 PK 0.7 0.8 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.4 0.7 0.8 11 EQ5250 UNIT HEATER FAN ELEC 103 93 103 99 0 0 0 0 0 0 99 103 599 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0											0.0	0.0	0.0	0.0	0.0
PK 0.7 0.8 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.4 0.7 0.8 11 EQ5250 UNIT HEATER FAN ELEC 103 93 103 99 0 0 0 0 0 0 99 103 599 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0	11	EQ2201		GAS F	IRED UNI	T HEATER		Diag. I	132 11 11 D	quipinoni					
PK 0.7 0.8 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.4 0.7 0.8 11 EQ5250 UNIT HEATER FAN ELEC 103 93 103 99 0 0 0 0 0 0 99 103 599 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0		GAS	247	244	64	28	0	0	0	0	0	0	69	241	
11 EQ5250 UNIT HEATER FAN ELEC 103 93 103 99 0 0 0 0 0 99 103 599 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 599 103		PK	0.7	0.8	0.4	0.0	0.0	0.0	0.0						L
ELEC 103 93 103 99 0 0 0 0 0 0 99 103 599												0	V.4	0.7	0.8
PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 599				UNIT	HEATER F	'AN									
PK 0.1 0.1 0.1 0.0 0.0 0.0					103	99	0	0	0	0	0	0	99	103	599
		PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0				

Num Code Jan Feb Mar Apr Nam June July Aug Sep Oct Nam Dec Total					E Q	UIPM	ENT	ENEF	RGY C	onsu	мрті	0 N			
Num Code	Ref	Equip													
MATERIURE BOILER			.Tan	Fah	Man			-	-						
CAS 91 82 20 20 0 0 0 0 0 0 0	210	2040	oan	reb	Mai	Apr	May		_	_	Sep	Oct	Nov	Dec	Total
CAS	12			WATE	RTUBE BO	ILER		Bldg. 1:	55 HW Equ	iipment					
FX		GAS	91				0	٥	0	0	0	•	2.0	••	 1
12 E05020		PK	0.5							-					
ELEC								0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.6
FK	12	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
PK		ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2 433
SEEC 93 84 93 90 0 0 0 0 0 0 0 0		PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0				L
File													-		0.0
PK	12	EQ5311		BOIL	ER CONTR	OLS									
Bidg. 158 HW Equipment Bidg. 158 HW Equipment				84	93	90	0	0	0	0	0	0	90	93	543
13 EQ2201 GAS FIRED UNIT HEATER GAS 159 155 30 21 0 0 0 0 0 0 0 38 154 556 0.6 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.6 0.6 0.6 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.6 0		PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
GAS 158 155 30 21 0 0 0 0 0 0 0 38 154 556 PK 0.6 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.6 0.6 0.6 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.6 0.6 0.6 0.6 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6		T0000						Bldg.	158 HW E	quipment					
PK 0.6 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.3 36 154 556 0.6 13 E05250	13														
13 EQ5250 UNIT HEATER FAN ELEC 101 91 71 64 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0											0	0	38	154	556
ELEC 101 91 71 64 0 0 0 0 0 0 0 0 0		PK	0.6	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.6
ELEC 101 91 71 64 0 0 0 0 0 0 0 0 0	13	E05250		ידואוו	HEATED 1	FAN									
PR			101				0	0	0	•					r
Bidg. 141 HW Equipment Bidg. 141 HW Equipment															
EQ2263 ELECTRIC RESISTANCE HEAT WITH FAN ELEC 1214 1172 275 169 0 0 0 0 0 0 0 0 0			<u> </u>				0.0				0.0	0.0	0.2	0.2	0.2
PK 3.7 3.7 2.1 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.1 3.7 3.7 Bldgs. 260 & 261 HW Equipment Substitute of the control of the c	14	EQ2263		ELEC:	TRIC RES	ISTANCE H	EAT WIT			p					
PK 3.7 3.7 2.1 0.2 0.0 0.0 0.0 0.0 0.0 0.0 2.1 3.7 3.7 3.7 Bldgs. 260 & 261 HW Equipment Bldgs. 260 & 261 HW Equipment		ELEC	1214	1172	275	169	0	0	0	0	0	0	309	1157	4 295
Bldgs. 260 & 261 HW Equipment GAS 69 64 17 16 0 0 0 0 0 0 0 0 18 67 250 PK 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		PK	3.7	3.7	2.1	0.2	0.0	0.0	0.0	0.0					
GAS 69 64 17 16 0 0 0 0 0 0 0 18 67 250 PK 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0								Bldgs, 2	260 & 261	HW Equip	ment		<u> </u>		• • • • • • • • • • • • • • • • • • • •
PK 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	15			WATE	RTUBE BO	ILER								•	•
15 EQ5020					17	16	0	0	0	0	0	0	18	67	250
ELEC 275 249 275 266 0 0 0 0 0 0 0 266 275 1,607 PK 0.4 0.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0		PK	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4
ELEC 275 249 275 266 0 0 0 0 0 0 0 266 275 1,607 PK 0.4 0.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0	16	POE 020		*****	****										
PK	13		275						_						
15 EQ5311 BOILER CONTROLS ELEC 93 84 93 90 0 0 0 0 0 0 0 0 90 93 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0															<u> </u>
ELEC 93 84 93 90 0 0 0 0 0 0 0 90 93 543 PK 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0			<u> </u>	0.1			0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
PK	15	EQ5311		BOILE	ER CONTRO	OLS									
PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0		ELEC	93	84	93	90	0	0	0	0	0	0	9.0	63	[<u>F42 1</u>
15 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 275 249 275 266 0 0 0 0 0 0 266 275 1,607 PK 0.4 0.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0		PK	0.1	0.1	0.1	0.1	0.0								
ELEC 275 249 275 266 0 0 0 0 0 0 0 266 275 1,607 PK 0.4 0.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0												• • • • • • • • • • • • • • • • • • • •	<u> </u>		0.1
PK 0.4 0.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0	15	EQ5020		HEAT]	ING WATER	CIRCULA	TION PU	MP							
PK 0.4 0.4 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0			275	249	275	266	0	0	0	0	0	0	266	275	1,607
Bldg. 268 HW Equipment		ÞK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0			
								Bldg. 2	268 HW E	quipment					
16 WATERTUBE BOILER	16														
							0	0	0	0	0	0	65	223	827
027		FK	0.7	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.7	0.8
				249	275 0.4	266	0	0.0	0.0	0.0					L
GRG 022 022													65	223	827
BV 0.7 0.0 0.1 0.1 0.1 827		-11	0.7	0.8	0.4	0.0	υ.0	υ.ο	0.0	0.0	0.0	0.0	0.4	0.7	0.8

------ EQUIPMENT ENERGY CONSUMPTION-----Ref Equip ------ Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Total HEATING WATER CIRCULATION PUMP 16 EQ5020 417 ELEC 376 417 403 0 0 0 0 0 0 403 417 2,433 PΚ 0.6 0.6 0.6 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.6 0.6 16 EQ5311 BOILER CONTROLS ELEC 90 0 0 0 0 0 0 90 93 543 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1

PAGE 1

> 030185.06 EEAP BOILER-CHILLER STUDY FT. SAM HOUSTON, TEXAS CORPS. OF ENGINEERS - FORT WORTH, TX. HUITT-ZOLLARS INC. AREA 100

Weather File Code:

 Location:
 SAN ANTONIO, TEXAS

 Latitude:
 29.0 (deg)

 Longitude:
 98.0 (deg)

 Time Zone:
 6

 Elevation:
 792 (ft)

 Barometric Pressure:
 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)

Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run:

14:39:23 2/22/96

Dataset Name:

FSH100A .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 2 ECO A-INSTALL EMS AIRSIDE SYS.

System Totals

Percent	Cool	ing Loa	d	Heati	ng Load	Cooling Airflow -				Heating Airflow				
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours		
Load	(Ton)	(왕)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)			
0 - 5	25.9	24	1,018	-160,080	69	775	13,765.7	0	0	0.0	0	0		
5 - 10	51.8	16	703	-320,159	13	144	27,531.5	8	683	0.0	0	0		
10 - 15	77.7	4	165	-480,239	7	78	41,297.2	1	96	0.0	0	0		
15 - 20	103.5	5	201	-640,319	3	35	55,062.9	0	4	0.0	0	0		
20 - 25	129.4	4	176	-800,398	2	18	68,828.7	0	0	0.0	0	0		
25 - 30	155.3	18	753	-960,478	0	0	82,594.4	0	0	0.0	0	0		
30 - 35	181.2	2	77	-1,120,558	1	14	96,360.1	56	4,867	0.0	0	0		
35 - 40	207.1	2	104	-1,280,637	1	6	110,125.9	0	27	0.0	0	0		
40 - 45	233.0	1	50	-1,440,717	1	6	123,891.6	0	27	0.0	0	0		
45 - 50	258.9	3	149	-1,600,797	1	14	137,657.4	1	58	0.0	0	0		
50 - 55	284.7	4	179	-1,760,876	1	9	151,423.1	0	21	0.0	0	0		
55 - 60	310.6	6	269	-1,920,956	2	20	165,188.8	0	5	0.0	0	0		
60 - 65	336.5	9	392	-2,081,035	0	3	178,954.5	0	0	0.0	0	0		
65 - 70	362.4	1	34	-2,241,115	0	0	192,720.3	0	0	0.0	0	0		
70 - 75	388.3	0	0	-2,401,195	0	0	206,486.0	32	2,828	0.0	0	0		
75 - 80	414.2	0	0	-2,561,274	0	0	220,251.7	0	0	0.0	0	0		
80 - 85	440.1	0	0	-2,721,355	0	0	234,017.5	0	0	0.0	0	0		
85 - 90	465.9	0	0	-2,881,433	0	0	247,783.2	0	42	0.0	0	0		
90 - 95	491.8	0	0	-3,041,514	0	0	261,549.0	0	0	0.0	0	0		
95 - 100	517.7	0	0	-3,201,593	0	.0	275,314.7	1	102	0.0	0	0		
Hours Off	0.0	0	4,490	· 0	0	7,638	0.0	0	0	0.0	0	8,760		

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO A-INSTALL EMS WATERSIDE SYS

	EQUIPMENT ENERGY CONSUMPTION													
Def	Equip					Man	. h]							
	Code	Jan	Feb	Mar	Apr	mon May	June	sumption July	Aug	Sep	0ct	Nov	Dec	Total
					-	-		•	3					10001
0	LIGHTS													
	ELEC	74860	67694	79738	71659	77299	76537	72421	79738	7 1659	77299	71659	72421	892,986
	PK	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8	434.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
_	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD	•	•	•										
	P CHILL PK	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0
	FK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1		BASE UTILITY		Y										
	CHILLD	0	0	0	0	945	914	945	945	914	945	0	0	5,608
	PK	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	1.3
2			BAS	E UTILIT	Y									
	HOTLD	55	49	55	53	0	0	0	0	0	0	53	55	319
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
3			BAS	E UTILIT	v									
-	CHILLD	0	0	0	0	982	950	982	982	950	982	0	0	5,829
	PK	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	1.3
4				E UTILIT										
	HOTLD	55	49	55	53	0	0	0	0	0	0	53	55	320
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

PK

0.0

0.0

0.0

0.0

1.4

1.4

1.4

1.4

1.4

1.4

0.0

0.0

1.4

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2
ECO A-INSTALL EMS WATERSIDE SYS

------ EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Mar Jan Feb Apr May June July Total BASE UTILITY CHILLD 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY HOTLD 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 618 598 618 618 598 618 0 0 3,665 PK 0.0 0.0 0.0 0.0 0.8 0.8 0.8 0.8 0.8 0.8 0.0 0.0 0.8 BASE UTILITY HOTLD 45 41 45 44 0 0 0 0 0 0 44 45 263 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 BASE UTILITY CHILLD 0 0 0 0 662 641 662 662 641 662 0 3,930 PK 0.0 0.0 0.0 0.0 0.9 0.9 0.9 0.9 0.9 0.9 0.0 0.0 0.9 10 BASE UTILITY HOTLD 33 30 33 32 0 0 0 0 0 32 33 195 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 967 936 967 967 936 967 0 0 5.741 PK 0.0 0.0 0.0 0.0 1.3 1.3 1.3 1.3 1.3 1.3 0.0 0.0 1.3 BASE UTILITY HOTLD 45 41 45 0 0 0 44 0 0 0 44 45 265 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 13 BASE UTILITY CHILLD - 0 0 0 0 967 936 967 967 936 967 0 0 5,741 PK 0.0 0.0 0.0 0.0 1.3 1.3 1.3 1.3 1.3 1.3 0.0 0.0 . 1.3 14 BASE UTILITY HOTLD 45 41 45 44 0 0 0 0 0 0 44 45 265 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 15 BASE UTILITY CHILLD 0 0 0 0 1034 1001 1034 1034 1001 1034 0 0 6.138

Ref	Equip -					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
16			BASE	UTILITY										
	HOTLD	53	48	53	51	0	0	0	0	0	0	51	53	308
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
17			BASE	UTILITY										
	CHILLD	0	0	0	0	729	706	729	729	706	729	0	0	4,328
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
18			BASE	UTILITY										
	HOTLD	45	41	45	44	0	0	0	0	0	0	44	45	269
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
19			BASE	UTILITY										
	CHILLD	0	0	0	0	1473	1426	1473	1473	1426	1473	0	0	8,744
	PK	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0
20			BASE	UTILITY										
	HOTLD	37	34	37	36	0	0	0	0	0	0	36	37	21
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
21			BASE	UTILITY										
	HOTLD	37	34	37	36	0	0	. 0	0	0	0	36	37	21
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.:
22			BASE	UTILITY										
	CHILLD	0	0	0	0	774	749	774	774	749	774	0	0	4,59
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
23			BASE	UTILITY										
	HOTLD	41	37	41	39	0	0	0	0	0	0	39	41	23
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.:
24	,			UTILITY										
	CHILLD	- 0	0	0	0	394	382	394	394	382	394	0	0	2,34
	PK	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	. 0.
25				UTILITY										
	HOTLD	15	13	15	14	0	0	0	0	0	0	14	15	8
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
26			BASE	UTILITY										
	CHILLD	0	0	0	0	536	518	536	536	518	536	0	0	3,18
	PK	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.

				E Q	UIPI	мент	ENEI	RGY (CONS	UMPTI	O N			
Ref	Equip -				· -	Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
27			BASE	UTILITY										
	HOTLD	26	24	26	26	0	0	0	0	0	0	26	26	154
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28			BASE	UTILITY										
	CHILLD	0	0	0	0	82	79	82	82	79	82	0	0	486
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
29			BASE	UTILITY										
	HOTLD	6	6	6	6	0	0	0	0	0	0	6	6	37
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
. 30			BASE	UTILITY										
	CHILLD	0	0	0	0	2232	2160	2232	2232	2160	2232	0	0	13,248
	PK	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0
31			BASE	UTILITY										
	HOTLD	92	83	92	89	0	0	0	0	0	0	89	92	535
	PK	0.1	0.1	0.1	0.1	0.0	0.0 Dida	0.0 s. 122 & 14	0.0	0.0	0.0	0.1	0.1	0.1
1	ACC2		TYPI	CAL AIR C	COOLED	RECIP CH	-	5. 122 (2. 14	O CIIW L	quipinent				
	ELEC	0	0	0	0	11500	13118	14970	15991	11521	6423	0	0	73,523
	PK	0.0	0.0	0.0	0.0	59.1	61.8	64.1	63.6	59.4	51.6	0.0	0.0	64.1
1	EQ5001		CHIL	LED WATER	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
1	EQ5300		CONT	ROL PANEI	& INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
1	EQ5001		CHIL	LED WATER	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	. 0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
2	ACC2		TYPI	CAL AIR (COOLED	RECIP CH		124 & 125	CHW Eq	uipment				
	ELEC	0	0	0	0	12439	14389	16385	17255	12399	6791	0	0	. 79,658
	PK	0.0	0.0	0.0	0.0	62.4	65.7	68.5	67.9	62.8	51.7	0.0	0.0	68.5
2	EQ5001		CHIL	LED WATER	PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2

				E Q	UIPN	1 E N T	ENEF	R G Y	CONST	JMPTI	0 N			
Ref	Equip													
Num	Equip Code	Jan	Feb	Mar		Mont	June June	-						
Num	code	Jan	Len	Mai	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5300		CONT	ROL PANEI	& INTE	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
														
2	EQ5001		CHILI	LED WATER	R PUMP -	CONST	NT VOLUM	Æ						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
							Bldg. 1	28 CHW E	quipment					
3	ACC2					RECIP CHI								
	ELEC	0	0 ·	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
,	EQ5001		CUTT	LED WATER	. מאדזם	correm		-						
3	ELEC	0	CHIP	O WATER	C PUMP .	- CONSTA	NT VOLUM 0	JE.	0	0	•			
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5300		CONT	ROL PANEI	L & INT	ERLOCKS								
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
							Bldg. I	33 CHW I	Equipment	······································				
4	ACC1		TYPI	CAL AIR (COOLED 1	RECIP CH								
	ELEC	. 0	0	0	0	7553	8519	9632	10320	7726	3784	0	0	47,534
	PK	0.0	0.0	0.0	0.0	37.9	43.2	44.8	44.4	41.5	36.1	0.0	0.0	44.8
_														
4	EQ5001			LED WATE			ANT VOLU							<u> </u>
	ELEC PK	0.0	0.0	0.0	0	833	806	833	833	806	833	0	0 ·	4,946
	FK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1
4	EQ5300		CONT	ROL PANEI	. ב TNT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
						<u> </u>	Bldgs	134 & 135	CHW Equ	ipment		•		
5	ACC1		TYPI	CAL AIR (COOLED 1	RECIP CH	ILLER		•	•				
	ELEC	- 0	0	0	0	14311	14275	16792	18510	13965	9015	0	0	86,869
	PK	0.0	0.0	0.0	0.0	49.6	51.8	53.8	53.3	49.8	45.9	0.0	0.0	53.8
						• •								
5	EQ5001			LED WATE			ANT VOLU						•	
	ELEC	0	. 0	0	0	275	266	275	275	266	275	0	0	1,634
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
5	EQ5300		CONT	ROL PANE	. c. Thirm	בפו הכעכ								
,	ELEC	0	0	OL PANE	0 % 1011	744	720	744	744	720	744	0	0	4 416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0		1.0	1.0	0.0	0.0	1.0
		5.5			0.5				1.0	1.0		0.0	0.0	1.0

				E Q	UIPM	ENT	ENEF	GY (соивт	JMPTI	O N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
							Bldg. I	43 CHW E	auipment	-				
6	ACC2		TYPI	CAL AIR C	COOLED F	ECIP CH	_		4					
	ELEC	0	0	. 0	0	13098	14039	15614	17327	12826	8167	0	0	81,071
	PK	0.0	0.0	0.0	0.0	62.2	65.0	67.4	66.8	62.4	54.3	0.0	0.0	67.4
6	EQ5001		CHIL	LED WATER	R PUMP -	CONST	ANT VOLUM	1E						
	ELEC	0	0	0	0	1667	1613	1667	1667	1613	1667	0	0	9,892
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
6	EQ5300			ROL PANEI										
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
,	3.001		mi m				-	144 CHW	Equipmen	t				
,	ACC1 ELEC	0	1,151	CAL AIR (1100					
	PK	0.0	0.0	0.0	0.0	826 4.3	887	984	1100	804	580	0	0	5,181
	FK	0.0	0.0	0.0	0.0	4.3	4.5	4.6	4.6	4.3	3.7	0.0	0.0	4.6
7	EQ5001		CHIL	LED WATER	R PUMP -	CONST	ANT VOLUM	AE:						
	ELEC	0	0	0	0	564	556	569	620	529	517	0	0	3,356
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
7	EQ5300		CONT	ROL PANEI	L & INTE	ERLOCKS								
	ELEC	0	0	0	0	252	248	254	277	236	231	0	0	1,498
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
8	ACC2		TYPI	CAL AIR (COOLED 1	RECIP CH	ILLER							
	ELEC	0	0	0	0	10454	11381	12734	14359	10241	5748	0	0	64,917
	PK	0.0	0.0	0.0	0.0	56.5	59.1	61.2	60.7	56.7	49.3	0.0	0.0	61.2
								·						
8	EQ5001	•		LED WATER			ANT VOLU		500					
	ELEC PK	0.0	0	0	0	564	556	569	620	529	437	0	0	3,275
	PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
8	EQ5300		CONT	ROL PANEI	r. & TNT	ERT.OCKS								•
	ELEC	. 0	0	0	0	252	248	254	277	236	195	0	0	1,462
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
								145 CHW				0.0	0.0	2.0
9	EQ1307		PACK	AGED TER	MINAL A	IR CONDI	-	3	- 4ben					
	ELEC	0	0	0	0	5359	6687	7872	8328	5645	2914	0	0	36,804
	PK	0.0	0.0	0.0	0.0	51.9		56.0	55.5	52.0	48.6	0.0	0.0	56.0
						·								
9	EQ5215		COND	ENSER FAI	NS-HEAT	PUMP								
	ELEC	0	0	0	0	756	950	1522	1176	811	392	0	0	5,607
	PK	0.0	0.0	0.0	0.0	4.8	5.5	7.4	7.4	5.2	3.8	0.0	0.0	7.4

				E Q	UIP	MENT	E N E	RGY	CONS	UMPT:	ION			
Ref	Equip					Mon	thir Com							
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug		0	· · · · · · · · · · · · · · · · · · ·		
							ounc	oury	Aug	Sep	Oct	Nov	Dec	Total
9	EQ5308		CONT	ROLS										
	ELEC	0	0	0	0	74	72	74	74	72	74	0	0	442
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
							Bldg	146 CHW	Equipmen	nt				***
10	ACC1		TYPI	CAL AIR (COOLED	RECIP CH	ILLER							
	ELEC	0	0	0	0	12695	13543	15069	16641	12387	7892	0	0	78,227
	PK	0.0	0.0	0.0	0.0	60.3	63.0	65.3	64.8	60.5	52.6	0.0	0.0	65.3
10	EQ5001			LED WATER		- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	833	806	833	833	806	833	0	0	4,946
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1
.10	FOERA													
10	EQ5300 ELEC			ROL PANEI										
	PK	0.0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
11	ACC2		ידמעיזי	CAL AIR O	OOI ED	DEGID GU	Bldgs	. 147 & 14	9 CHW E	quipment				
	ELEC	0	0	O O	0 03.000.	19696	23601	27149						
	PK	0.0	0.0	0.0	0.0	81.0	86.4	89.6	26932 88.9	20942	9924	0	0	128,244
			•••	0.0	0.0		00,4	09.6	88.9	82.6	75.1	0.0	0.0	89.6
11	EQ5001		CHIL	LED WATER	PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	2775	2686	2775	2775	2686	2775	0	0	16,472
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
						·						0.0	0.0	3.7
11	EQ5300		CONT	ROL PANEI	& INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	.0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
						•		197 CHW	Equipmen	nt				
12	ACC2		TYPI	CAL AIR C	COOLED	RECIP CH	ILLER							
	ELEC	0	0	0	0	13599	14193	15511	16829	13043	8055	0	0	81,229
	PK	0.0	0.0	0.0	0.0	59.3	62.0	64.2	63.7	59.5	51.7	0.0	0.0	64.2
12	EQ5001													
12	ELEC	. 0	CHILL	LED WATER			ANT VOLU							
	PK	0.0	0.0	0	0	1109	1073	1109	1109	1073	1109	0	0	6,580
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
12	EQ5300		CUMUL	ROL PANEL	. ይ ተለም።	במזיטיה ב								
	ELEC	0	0	OL PANEL 0	0 2 1 1 1 1	744	720	744	244	500		_		
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	720	744	0	0	4,416
	•		•.0	0.0	0.0	L				1.0	1.0	0.0	0.0	1.0
13	EQ1113		AIR-C	CLD RECIP	ROCATTI	NG < 15 '	-	198 CHW	≞quipmen!					
	ELEC	0	0	0	0	2940	3176	3629	4003	2921	1648	0	^	
	PK	0.0	0.0	0.0	0.0	13.5	14.1	14.7	14.5	13.6	11.8	0.0	0	18,317
								11./	14.3	13.0	11.0	0.0	0.0	14.7

			 -	E Q	UIP	MENT	ENE	RGY	CONS	UMPT	I O N	·		
Ref	Equip		. 			Mon	thlu Con	gumntion						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
13	EQ5203		2037											
13	ELEC	0				CLD CHIL								
			0	0	0	373	420	560	534	388	183	0	0	2,457
	PK	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	1.5	0.0	0.0	1.8
13	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	833	806	833	833	806	833	0	0	4,946
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1
13	EQ5313		CONT	DOT C										
1.5	ELEC	0	0	0	0	222	216							
	PK	0.0	0.0		0	223	216	223	223	216	223	0	0	1,325
	FK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
14	ACC1		TVDT	CAT. ATD	COOLED	RECIP CH		199 CHW	Equipmen	ıt				
	ELEC	0	0	0	0	4999	5585	6319	6922	5138	3100	0	•	22.052
	PK	0.0	0.0	0.0	0.0	24.8	25.9	26.9	26.7	24.9	21.6	0.0	0	32,063
			•••	0.0	0.0	27.0	23.9	20.3	20.7	24.9	21.6	0.0	0.0	26.9
14	EQ5001		CHIL	LED WATE:	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	1109	1073	1109	1109	1073	1109	0	0	6,580
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
14	EQ5300		CONT	ROL PANE	T C TNY	EDI OCKO								
	ELEC	0	0	0	0	744	720	744	744	720	744	•		
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0	4,416
					• • • •	1.0			Equipmen		1.0	0.0	0.0	1.0
15	EQ1161		AIR	COOLED C	OND COM	IP < 15 T	_	127 (1111	Lquipmen					
	ELEC	0	0	0	0	1234	1417	1695	1830	1213	644	0	0	8,033
	PK	0.0	0.0	0.0	0.0	6.6	6.9	7.1	7.1	6.6	6.1	0.0	0.0	7.1
15	EQ5200		CONTO	ENSER FA	NIC.									
	ELEC	0	0	0	0	109	131	185	171	110	F.2	•		
	PK	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.4	0.0	0.0	0.6
				- • •	0.0		0.0		0.0	0.0	0.4	0.0	0.0	0.6
15	EQ5303		CONT	ROLS										
	ELEC	. 0	0	0	0	223	216	223	223	216	223	0	0	1,325
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
							Bldg.	250 CHW	Equipmen	t	-			
16	ACC2		TYPI	CAL AIR	COOLED	RECIP CH	ILLER							
	ELEC	0	0	0	0	37250	43641	51157	51906	39605	20629	0	0	244,189
	PK	0.0	0.0	0.0	0.0	142.6	149.5	161.4	164.8	143.7	125.7	0.0	0.0	164.8
16	EQ5001		СПІТ	LED WATE	מואוזם ק	- C∪NIGE	ANT VOLU	ме						
	ELEC	0	0	0 0	0	4166	4032	4166	4166	4032	4166	•	•	
	PK	0.0	0.0	0.0	0.0	5.6	5.6	5.6	5.6	5.6	4166 5.6	0.0	0.0	24,730
				- • •	2.0	- 3.0		3.0			3.0	0.0	0.0	5.5

ELEC

PΚ

4589

17.3

4176

17.3

4843

17.3

4426

17.3

4357

17.3

4288

17.3

4234

17.3

4680

17.3

4081

17.3

4137

17.3

4426

17.3

4469

17.3

52,706

17.3

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO A-INSTALL EMS WATERSIDE SYS

EQUIPMENT ENERGY CONSUMPTION-----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr June July Aug Sep Oct. Nov Dec Total 16 EO5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 744 720 744 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 1.0 0.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 Bldg. 122 fans 1 TYPFAN GENERIC FAN ELEC 1911 1722 2213 2099 2066 2034 1987 2128 1935 1919 2040 1861 23,915 PK 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 Bldg. 140 fans 2 TYPFAN GENERIC FAN ELEC 175 156 195 179 176 175 181 196 165 164 175 169 2,105 PK 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 Bldg. 124 fans 3 TYPFAN GENERIC FAN ELEC 1911 1722 2226 2099 2066 2036 1987 2129 1935 1919 2032 1861 23,924 PK 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 Bldg. 125 fans 4 TYPFAN GENERIC FAN ELEC 3569 3217 3952 3922 4198 4198 4044 4366 3927 4106 3665 3478 46,642 PΚ 15.3 15.3 15.3 15.3 15.3 15.3 15.3 15.3 15.3 15.3 15.3 15.3 Bldg. 128 fans 5 TYPFAN GENERIC FAN ELEC 1747 1575 1935 1920 1881 1860 1813 1947 1770 1755 1770 1702 21,675 PΚ 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 Bldg. 133 fans 6 TYPFAN GENERIC FAN ELEC 2189 1984 2306 2132 2066 2036 2096 2279 1935 1979 2099 2140 25,242 PK 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 Bldg. 134 fans 7 TYPFAN GENERIC FAN ELEC 4479 4067 4720 4302 4235 4168 4096 4554 3966 4021 4302 4352 51,263 PK 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 Bldg. 135 fans 8 TYPFAN GENERIC FAN ELEC 4479 4067 4720 4302 4235 4168 4096 4554 3966 4021 4302 4352 51,263 PK 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 16.8 Bldg. 143 fans 9 TYPFAN GENERIC FAN ELEC 12188 11008 12188 11795 12188 11795 12188 12188 11795 12188 11795 12188 143,500 PΚ 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16.4 16.4 Bldg. 144 fans 10 TYPFAN GENERIC FAN

GAS

PK

228

3.6

231

92

73

0.2

0

0.0

0

0.0

0

0.0

0

0.0 0.0

0

0

0.0

94

2.1

222

3.6

938

3.6

				E Ç	UIPI	MENT	ENE	RGY (CONST	UMPT:	I O N			
Ref	Equip					Mont	hly Cons	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
							Bld∘. 1	45 fans						
11	TYPFAN		GEN	ERIC FAN			Diag.	15 142.0						
	ELEC	3255	2940	3255	3150	3255	3150	3255	3255	3150	3255	3150	3255	38,325
	PK	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
							Bldg. 1	146 fans						
12	TYPFAN	2055		ERIC FAN										
	ELEC PK	3255 7.5	7.5	3255 7.5	7.5	3255 7.5	3150	3255	3255	3150	3255	3150	3255	38,325
	FK		7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
13	TYPFAN		GEN	ERIC FAN			Blag.	147 fans						
	ELEC	1778	1621	1883	1715	1688	1662	1704	1856	1581	1586	1715	1739	20,528
	PK	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
		L					Bldg	149 fans						0.,
14	TYPFAN		GEN	ERIC FAN			2145.	117 20113						
	ELEC	1312	1198	1397	1272	1253	1233	1189	1288	1173	1188	1272	1286	15,061
	PK	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
							Bldg.	197 fans						
15	TYPFAN			ERIC FAN										P
	ELEC PK	1660	1496	1946	1824	1795	1767	1714	1844	1681	1667	1790	1617	20,800
	PK	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
16	TYPFAN		GEN	ERIC FAN			Bldg.	198 fans						
	ELEC	2381	2151	2381	2304	2381	2304	2381	2381	2304	2381	2304	2381	28,035
	PK	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
		<u> </u>						. 199 fans						3.2
17	TYPFAN		GEN	ERIC FAN			2.45							
	ELEC	553	497	618	563	554	549	536	574	519	515	557	536	6,571
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
							Bldg	. 127 fans						
18	TYPFAN			ERIC FAN										-
	ELEC PK	804	724	900	3.2	807	799	780	835	756	749	810	781	9,563
	FK	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
19	TYPFAN		GEN	ERIC FAN			Bldg	g. 250 fans						
	ELEC	1473	1338	1574	1450	1411	1390	1434	1558	1322	1401	1434	1445	17,230
	PK	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
		L												5.0
20	TYPFAN		GEN	ERIC FAN										
	ELEC	14756	13328	14756	14280	14756	14280	14756	14756	14280	14756	14280	14756	173,740
	PK	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
					-		Bldgs	122 & 14) HW Equi	ipment	<u> </u>			
1			WAT	ERTUBE BO	DILER		-							

				E Q	UIPM	ENT	ENE	RGY C	onsu	мрті	о и			
Ref	Equip					Mont	hlv Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	472	428	426	403	0	0	0	0	0	0	416	470	2,614
	PK	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
1	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	53	48	48	45	0	0	0	0	0	0	46	53	292
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
1	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,557
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
2			WATE	RTUBE BO	ILER		Bldgs.	124 & 125 1	HW Equip	ment				
	GAS	216	218	89	73	0	0	0	0	0	0	93	211	
	PK	3.1	3.1	1.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.9	3.1	3.1
2	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	472	428	426	403	0	0	0	0	0	0	416	470	2 614
	PK	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
2	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	53	48	48	45	0	0	0	0	0	0	46	53	292
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
2	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,557
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
3			WATE	RTUBE BO	TT.DD		Bldg.	128 HW Eq	uipment					
	GAS	0	0	0	0	0	0	0	0	•		_		
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	МР							
	ELEC	. 0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5311		BOIL	ER CONTRO	OLS							-		
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4			WATE	RTUBE BOI	TLER		Bldg.	133 HW Eq	uipment					
-	GAS	208	205	77	60	0	0	0	2	^	_			<u></u>
	PK	1.5	1.5	1.5	0.1	0.0			0	0	0	81	207	838
		1.5	4.5	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5

	The Code													
Ref	Equip -					Mont	hly Cons	umpt i on						
Num		Jan	Feb								Oct	Nov	Dec	Total
4														
									-					L
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
4	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1		<u> </u>
	705040												_	
4		0.775												
														L
	PK	3.7	3.1	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
5			WATE	RTUBE BO	ILER		Bldgs	134 & 135	HW Equip	ment				
	GAS	62	55	46	45	0	0	0	0	0	0	45	60	313
	PK	1.3	1.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.1	1.3
_	E05020													
5	EQ5020 ELEC	98	HEAT 88		R CIRCULA					_	_			
	PK	0.4	0.4	92	0.4	0.0	0	0	0	0	0	89	98	554
	FK	0.4	·····	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
5	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	33	30	31	30	0	0	0	0	0	0	30	33	187
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
6			tan mm	DWIDE 50			Bldg. 1	143 HW Eq	uipment					
•	GAS	117	124	RTUBE BO	TLER 60	0	0	0	•		_			
	PK	2.6	2.9	0.5	0.2	0.0	0.0	0.0	0.0	0	0	62	104	533
	••	2.0	2.5	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.8	2.9
6	EQ5020		HEAT	'ING WATE	R CIRCULA	TION PU	IMP							
	ELEC	294	272	282	270	0	0	0	0	0	0	270	295	1,683
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
6	EQ5311		BOTT	ER CONTR	07.5									
	ELEC	·49	45	47	45	0	0	0	0	0	0	45	49	281
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
					I		Bldg.	144 HW E	quipment			L	————I	
7			WATE	RTUBE BO	ILER		3							
	GAS	117	124	66	60	0	0	0	0	0	0	62	104	533
	PK	2.6	2.9	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.8	2.9
7	EQ5020		שאטע	ידאים שאידיי	R CIRCULA	ית ארות	IMD							
·	ELEC	294	272	282	270	.1101 PC	0	0	0	0	0	270	295	7 693
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	1,683
		<u> </u>				V.0	3.0	0.0	0.0	0.0	0.0	L	٠.٥	U.8

				E Q	UIPM	ENT	ENER	G Y C	onsu	мрті	O N			
Ref	Equip -					Mont	hly Cone	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
		•	102		np.	ıwy	Cuite	oury	nug	зер	occ	NOV	Dec	iotai
7	EQ5311		BOIL	ER CONTRO	OLS									
	ELEC	49	45	47	45	0	0	0	0	0	0	45	49	281
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
		**************************************					Bldg. 1	45 HW Eq	uipment					
8	EQ2263		ELEC	TRIC RES	ISTANCE H	EAT WIT	-	•	•					
	ELEC	1638	1677	635	532	0	0	0	0	0	0	603	1381	6,465
	PK	21.9	21.9	21.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	19.4	21.9	21.9
9			WA CO	RTUBE BO	TT PPD		Bldg. I	46 HW Eq	uipment					
9	GAS	124	130	RIUBE BO.	60	0	0	0	0		_			
	PK	2.9	2.9	0.2	0.2	0.0	0.0			0	0	60	106	543
	FR	2.3	2.9	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.9	2.9
9	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	JMP							
	ELEC	287	264	279	270	0	0	0	0	0	0	270	286	1,655
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
9	EQ5311 ELEC			ER CONTR			_							
	PK	0.1	0.1	0.1	0.1	0	0	0	0	0	0	45	48	276
	PK	L 0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
10			WATE	RTUBE BO	TLER		Bldg.	147 HW E	quipment					
	GAS	114	110	51	50	0	0	0	0	0	0	50	90	465
	PK	1.3	1.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	1.4
10	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	ЈМР							
	ELEC	238	199	186	180	0	0	0	0	0	0	180	209	1,192
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
10	EQ5311		POTI	ER CONTR	OT C									
10	ELEC	40	33	31	30	0	0	0	0	0	0	30	35	100
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	199
		L				•.•		149 HW E		0.0	0.0			0.1
11			WATE	RTUBE BO	ILER		Diug.	147 II W L	quipment					
	GAS	114	110	51	50	0	0	0	0	0	0	50	90	465
	PK	1.3	1.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	1.4
														•
11	EQ5020				R CIRCULA									F
	ELEC	238	199	186	180	0	0	0	0	0	0	180	209	1,192
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
11	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	40	33	31	30	0	0	0	0	0	0	30	35	199
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

				E Q	UIPM	ENT	ENER	GY C	onsu	мрті	0 N			
Ref	Equip					Mont	hlv Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	0ct	Nov	Dec	Total
							Bldø 19	7 HW Equ	ipment					
12			WATE	RTUBE BO	ILER		2.05.17							
	GAS	108	104	46	45	0	0	0	0	0	0	45	94	443
	PK	2.7	2.7	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.6	2.7
10	EQ5020		UEAT.	ואר שאיים	R CIRCUL	יים זארייי	TMTD							
12	ELEC	111	102	93	90	ATTON PC	MP 0	0	0	0	0	0.0	100	505
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0	0.0	90	109	595
	PK	0.8		0.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
12	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	19	17	15	15	0	0	0	0	0	0	15	18	99
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
							Bldg.	198 HW E	quipment			<u></u>		
13			WATE	RTUBE BO	ILER									
	GAS	39	37	20	19	0	0	0	0	0	0	19	36	171
	PK	0.9	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	0.9
13	EQ5020				R CIRCULA									
	ELEC PK	115	106	104	101	0	0	0	0	0	0	101	114	641
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
13	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	26	24	23	23	0	0	0	0	0	0	23	25	143
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
			***************************************				Bldg.	199 HW E	quipment					
14			WATE	RTUBE BO	ILER		_		•					
	GAS	108	109	45	35	0	0	0	0	0	0	46	109	452
	PK	1.6	1.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.6	1.6
	TOT 202		****											
14	EQ5020 ELEC	0.2.2			R CIRCUL				_	_				
	PK	833	753	833	1.1	0.0	0.0	0.0	0.0	0.0	0.0	806	833	4,865
	**					0.0	0.0	0.0	0.0	0.0	0.0	<u> </u>	1.1	1.1
14	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
							Bldg.	127 HW E	quipment			L		
15	EQ2454		RESI	DENTIAL	GAS FURN	ACE WITE	H FAN							
	GAS	21	19	9	8	0	0	0	0	0	0	9	21	86
	PK	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4
15	EQ5254				FURNACE :									
	ELEC	540	488	540	523	0	0	0	0	0	0	523	540	3,154
	PK	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7

			E Q	UIPM	ENT	ENER	G Y C	onsu	MPTI	O N			
quip -					Mont	hly Cons	umption				· 		
ode	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
						Bldg, 2	50 HW Equ	ipment					
		STEA	M BOILER										
AS	153	138	126	122	0	0	0	0	0	0	122	134	795
К	1.7	1.2	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.7
25311		BOIL	ER CONTRO	OLS									
LEC	49	45	47	45	0	0	0	0	0	0	45	47	278
К	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
A.i K	S 5311 EC	S 153 1.7 5311 EC 49	STEAL S 153 138 1.7 1.2 5311 BOIL EC 49 45	STEAM BOILER S 153 138 126 1.7 1.2 0.3 5311 BOILER CONTRO EC 49 45 47	STEAM BOILER S 153 138 126 122 1.7 1.2 0.3 0.3 5311 BOILER CONTROLS EC 49 45 47 45	STEAM BOILER S 153 138 126 122 0 1.7 1.2 0.3 0.3 0.0 5311 BOILER CONTROLS EC 49 45 47 45 0	Bldg. 2: STEAM BOILER S 153 138 126 122 0 0 1.7 1.2 0.3 0.3 0.0 0.0 5311 BOILER CONTROLS EC 49 45 47 45 0 0	Bldg. 250 HW Equ STEAM BOILER S 153 138 126 122 0 0 0 0 1.7 1.2 0.3 0.3 0.0 0.0 0.0 BOILER CONTROLS EC 49 45 47 45 0 0 0	Bldg. 250 HW Equipment STEAM BOILER S 153 138 126 122 0 0 0 0 0 1.7 1.2 0.3 0.3 0.0 0.0 0.0 0.0 BOILER CONTROLS EC 49 45 47 45 0 0 0 0	Bldg. 250 HW Equipment STEAM BOILER S 153 138 126 122 0 0 0 0 0 0 1.7 1.2 0.3 0.3 0.0 0.0 0.0 0.0 0.0 BOILER CONTROLS EC 49 45 47 45 0 0 0 0 0	Bldg. 250 HW Equipment STEAM BOILER S 153 138 126 122 0 0 0 0 0 0 0 0 0 0 1.7 1.2 0.3 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Bldg. 250 HW Equipment STEAM BOILER S 153 138 126 122 0 0 0 0 0 0 0 122 1.7 1.2 0.3 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.3 BOILER CONTROLS EC 49 45 47 45 0 0 0 0 0 0 45	Bldg. 250 HW Equipment STEAM BOILER S 153 138 126 122 0 0 0 0 0 0 122 134 1.7 1.2 0.3 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.8 5311 BOILER CONTROLS EC 49 45 47 45 0 0 0 0 0 0 45 47

030185.06 EEAP BOILER-CHILLER STUDY FT. SAM HOUSTON, TEXAS CORPS. OF ENGINEERS - FORT WORTH, TX. HUITT-ZOLLARS INC. AREA 100

Weather File Code:

Air Density:

Location:	SAN AN	TONIO, TEXAS
Latitude:	29.0	(deg)
Longitude:	98.0	(deg)
Time Zone:	6	
Elevation:	792	(ft)
Barometric Pressure:	29.0	(in. Hg)
Summer Clearness Number.	0 00	

Summer Clearness Number:	0.90	
Winter Clearness Number:	0.90	
Summer Design Dry Bulb:	97	(F)
Summer Design Wet Bulb:	76	(F)
Winter Design Dry Bulb:	30	(F)
Summer Ground Relectance:	0.20	
Winter Ground Relectance:	0.20	

Air Specific Heat:	0.2444	(Btu/lbm/F)
Density-Specific Heat Prod:	1.0818	(Btu-min./hr/cuft/F)
Intent West Pagter.	4 761 0	(Dtu min /hn/auft)

0.0738 (Lbm/cuft)

Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 18: 7:13 2/22/96
Dataset Name: FSH100B .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 2 ECO A-INSTALL EMS AIRSIDE EQ

System Totals

Percent	Cool	ling Loa	d	Heatin	ng Load		Cooling	ng Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	9.7	41	2,513	-65,644	50	810	5,851.6	0	0	0.0	0	0
5 - 10	19.3	23	1,415	-131,287	25	397	11,703.2	0	0	0.0	0	0
10 - 15	29.0	9	533	-196,931	14	219	17,554.8	0	0	0.0	0	0
15 - 20	38.7	2	153	-262,574	1	16	23,406.5	0	0	0.0	0	0
20 - 25	48.3	2	119	-328,218	4	58	29,258.1	0	0	0.0	0	0
25 - 30	58.0	1	54	-393,861	1	23	35,109.7	0	0	0.0	0	0
30 - 35	67.6	1	64	-459,505	1	20	40,961.3	63	5,553	0.0	0	0
35 - 40	77.3	1	90	-525,148	1	10	46,812.9	1	86	0.0	0	0
40 - 45	87.0	1	78	-590,792	0	5	52,664.5	0	36	0.0	0	0
45 - 50	96.6	1	67	-656,436	0	0	58,516.1	1	79	0.0	0	0
50 - 55	106.3	1	74	-722,079	1	17	64,367.8	0	17	0.0	0	0
55 - 60	116.0	1	78	-787,723	0	0	70,219.4	0	4	0.0	0	0
60 - 65	125.6	6	347	-853,366	1	11	76,071.0	0	16	0.0	0	0
65 - 70	135.3	2	138	-919,010	1	9	81,922.6	0	5	0.0	0	0
70 - 75	145.0	2	144	-984,653	0	0	87,774.2	0	17	0.0	0	0
7 5 - 80	154.6	1	68	-1,050,297	1	10	93,625.8	0	33	0.0	0	0
80 - 85	164.3	2	145	-1,115,941	0	0	99,477.4	1	66	0.0	0	0
85 - 90	173.9	2	120	-1,181,584	0	0	105,329.0	0	23	0.0	0	0
90 - 95	183.6	0	0	-1,247,228	0	0	111,180.7	0	3	0.0	0	0
95 - 100	193.3	0	0	-1,312,871	0	0	117,032.3	32	2,822	0.0	0	0
Hours Off	0.0	0	2,560	0	0	7,155	0.0	0	0	0.0	0	8,760

				E	UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
						Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	21140	19120	22758	20197	21949	21815	20331	22758	20197	21949	20197	20331	252,742
	PK	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2			BAS	E UTILIT	Y									
	HOTLD	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	179	173	179	179	173	179	0	0	1,060
	PK	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.2
4			BAS	E UTILIT	Y									
	HOTLD	20	18	20	20	0	0	0	0	0	0	20	20	119
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Ref	Equip					Mont	hly Cons	umption -	· ·					
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
5			BASE	UTILITY										
Ĭ	CHILLD	0	0	0	0	707	684	707	707	684	707	0	0	4,19
	PK	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0.
6			BASE	UTILITY										
-	HOTLD	42	38	42	41	0	0	0	0	0	0	41	42	24
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
7			BASE	UTILITY										
•	CHILLD	0	0	0	0	870	842	870	870	842	870	0	0	5,16
	PK	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	1.
8			מסגם	UTILITY										
J	HOTLD	42	38	42	41	0	0	0	0	0	0	41	42	24
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
9				UTILITY										
	CHILLD	0	0	0	0	848	821	848	848	821	848	0	0	5,03
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.
10				UTILITY										
	HOTLD	. 29	26	29	28	0	0	0	0	0	0	28	29	16
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
11			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	.0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 .
12			BASE	UTILITY										
	HOTLD	4	4	4	4	0	0	0	0	0	0	4	4	2
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
13			BASE	UTILITY										
	CHILLD	Ö	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
14			BASE	UTILITY										
	HOTLD	7	7	7	7	0	0	0	0	0	0	7	7	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
15			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
										0.0				

ef	Equip					Mont	hly Cons	umption						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
16			BASE	UTILITY										
	HOTLD	7	7	7	7	0	0	0	0	0	0	7	7	4
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
.7			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
.8			BASE	UTILITY										
	HOTLD	4	3	4	4	0	0	0	0	0	0	4	4	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
.9			BASE	UTILITY										
	CHILLD	0	0	0	0	45	43	45	45	43	45	0	0	2
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	o
0			BASE	UTILITY										
	HOTLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C
1			BASE	UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
2			BASE	UTILITY										
	HOTLD	21	19	21	20	0	0	0	0	0	0	20	21	:
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3				UTILITY										
	CHILLD	0	0	0	0	335	324	335	335	324	335	0	0	1,
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	
4				UTILITY										
	HOTLD	15	13	15	14	0	0	0	0	0	0	14	15	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5				UTILITY										
	CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
6			BASE	UTILITY										
	HOTLD	16	14	16	15	0	0	0	0	0	0	15	16	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

ef Equip					Mont	hly Cons	umption						
um Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
:7		BASE	UTILITY										
CHILLD	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
28		BASE	UTILITY										
HOTLD	6	5	6	6	0	0	0	0	0	0	6	6	3
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
:9		BASE	UTILITY										
CHILLD	0	0	0	0	74	72	74	74	72	74	0	0	4.4
PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.
30		BASE	UTILITY										
HOTLD	12	11	12	12	0	0	0	0	0	0	12	12	7
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1		BASE	UTILITY										
CHILLD	0	0	0	0	223	216	223	223	216	223	0	0	1,32
PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0 .
2		BASE	UTILITY										
HOTLD	22	19	22	21	0	0	0	0	0	0	21	22	12
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
1 EQ1113		ATR-	CLD RECI	PROCATI	NG < 15 T	_	142 CHW I	Equipment					
ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
1 EQ5203		CONE	ENSER FA	NS-AIR (CLD CHILL	ER							
ELEC	0	0	0	0	. 0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
1 EQ5001		CHIL	LED WATE	R PUMP	- CONSTA	NT VOLUM	1E						
ELEC	Ö	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
1 EQ5313		CONT	ROLS										
ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
2 EQ11321	ı	WATE	R COOLED	SELF C	ONTAINED	-	123 CHW ទេ	Equipmen	ıı				
ELEC	0	0	404	3663	5575	6322	7273	7433	6087	1094	1043	0	38,8
PK	9.2	9.2	9.3	11.0	12.5	13.3	14.1	14.5	13.4	10.2	9.4	9.2	14

				E Q	UIP	MENT	ENE	RGY	const	JMPTI	O N			
Ref	Equip					Mont	thly Con	sumption		·				
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	55	848	1109	1073	1109	1109	1073	278	128	0	6,780
	PK	0.1	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.3	1.5
2	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	2	14	20	23	26	27	22	4	4	0	142
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
2	EQ5011		COND	enced wa	אוום סיות. אוום סיות	P-CV (MED)	TIM PODT	a \						
_	ELEC	0	0	136	1456	1637	1584	1637	1637	1504	710	400		Г
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	719	2.2	2.2	10,822
														2.2
2	EQ5302		CONT											
	ELEC	0	0	6	66	74	72	74	74	72	33	20	0	492
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	HUMIDIF		HUMI	DIFIER										
	ELEC	0	0	220	684	680	644	720	661	684	567	619	0	5,480
	PK	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
3	ACC1		TYPI	CAL AIR	COOLED :	RECIP CHI		126 CHW	Equipmen	t				
	ELEC	0	0	0	0	9287	9990	11088	11898	9177	5915	0	0	57.356
	PK	0.0	0.0	0.0	0.0	45.1	47.2	48.9	48.5	45.3	39.4	0.0	0.0	57,356 48.9
3	EQ5001		CUTI	LED WATE	מאנות מי	CONOM								
•	ELEC	0	0	O WAIE	ik PUMP		ANT VOLU							r
	PK	0.0	0.0	0.0	0.0	1109	1073	1109	1109	1073	1109	0	0	6,580
		•••	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
3	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
4	ACC1		TYPI	CAL AIR	COOLED 1	RECIP CHI		. 131 CHW	/ Equipmen	it				
	ELEC		0	0	0	7593	8267	9508	10228	7561	4942	0	0	140,000
	PK	0.0	0.0	0.0	0.0	35.5	37.1	38.5	38.2	35.7	31.0	0.0	0.0	48,099
4	EQ5001		OUT.											
*	ELEC	0	CHILL	LED WATE 0			ANT VOLU							T
	PK	0.0	0.0	0.0	0.0	1667	1613	1667	1667	1613	1667	0	0	9,892
	- 10	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	2.2
4	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

PK

0.1

0.0

0.2

0.4

0.5

0.6

1.0

1.0

0.6

0.3

0.2

1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2
ECO A-INSTALL EMS WATERSIDE EO

EQUIPMENT ENERGY CONSUMPTION-----Monthly Consumption -----Ref Equip Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec Total Bldg. 129 CHW Equipment 5 ACC1 TYPICAL AIR COOLED RECIP CHILLER ELEC 0 0 0 0 2486 2527 2810 2899 2508 2235 O 0 15,466 PK 0.0 0.0 0.0 0.0 5.6 5.8 6.0 6.0 5.6 4.9 0.0 0.0 6.0 5 EQ5001 CHILLED WATER PUMP -CONSTANT VOLUME ELEC 0 0 0 0 0 ٥ 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 744 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 6 ACC1 TYPICAL AIR COOLED RECIP CHILLER ELEC 0 7839 8223 9382 10201 8093 5575 0 0 49,313 PK 0.0 0.0 0.0 0.0 42.0 43.9 45.5 45.1 42.2 37.1 0.0 0.0 45.5 6 EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 600 590 581 624 562 521 0 0 3,477 PΚ 0.0 0.0 0.0 0.0 2.4 2.4 2.4 2.4 2.4 2.4 0.0 0.0 2.4 6 E05300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 252 248 244 262 236 219 0 1,461 0 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 Bldg. 151 CHW Equipment 7 EQ1307 PACKAGED TERMINAL AIR CONDITIONER ELEC 62 232 482 665 884 874 543 157 43 0 3,942 PK 3.6 3.6 3.6 3.7 4.0 4.1 4.3 4.2 4.0 3.7 3.6 3.6 4.3 7 EQ5215 CONDENSER FANS-HEAT PUMP ELEC 30 60 84 125 110 69 20 512 0 PK 0.1 0.1 0.2 0.3 0.4 0.5 0.5 0.5 0.4 0.3 0.2 0.1 0.5 7 EQ5308 CONTROLS ELEC . 0. 0 15 28 37 52 45 31 13 5 0 233 PK 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 Bldg. 154 CHW Equipment 8 EQ1307 PACKAGED TERMINAL AIR CONDITIONER ELEC 0 0 26 252 537 770 1101 1141 653 139 19 0 4,639 PK 7.0 7.0 7.0 7.3 8.1 8.3 8.3 7.8 7.3 7.0 7.0 8.3 8 EQ5215 CONDENSER FANS-HEAT PUMP ELEC 0 3 34 182 69 99 146 85 19 639

Ref Equip Sep Se					E C	UIPM	ENT	ENER	GY C	onst	JMPTI	о и			
Note Code Sain Peb Mar Apr May Sune Sully Aug Sep Oct Nov Dec Total	Ref	Equip					Mont	hlv Cons	umption						
RLRC			Jan	Feb								Oct	Nov	Dec	Total
PK	8	EQ5308	•	CONT	ROLS										
Bidg 156 CHW Equipment		ELEC	0	0	2	12	22	30	47	43	25	8	2	0	193
S SU3307 PACKAGED TERMINAL AIR CONDITIONER RLEC		PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ELEC	9	E01307		PACK	AGED TER	MINAT, AT	R CONDIT	_	156 CHW	Equipment	t				
PX			0						1092	1125	623	84	0	O	4 352
9 EQ521S ELEC 0 0 0 0 25 60 90 233 136 76 11 0 0 6 631 PK 0.0 0.0 0.2 0.3 0.5 0.6 1.8 1.8 0.6 0.3 0.2 0.0 1.0 9 EQ5308 CONTROLS ELEC 0 0 0 0 12 22 29 45 40 25 6 0 0 178 ELEC DATE OF A CONTROLS ELEC 10 0 0 0 12 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.1 0.0 Bidg. 157 CHW Equipment PACKAGED TERMINAL AIR CONDITIONER ELEC 25 12 196 233 699 766 933 923 621 316 148 22 4.833 PK 3.1 3.1 3.1 3.3 3.5 3.6 3.8 3.7 3.5 3.3 3.1 3.1 3.1 10 EQ5215 CONDENSER FANS-HEAT PUMP ELEC 2 1 23 45 83 107 148 128 87 41 18 2 683 PK 0.1 0.1 0.1 0.3 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.4 0.3 0.1 0.5 10 EQ5308 ELEC 4 2 16 18 53 58 64 62 53 44 11 2 367 PK 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1		PK	0.0	0.0	13.1	13.8	14.6								<u> </u>
ELEC			•												
PK	9	-	_												
P EG\$308 CONTROLS FANS-HEAT PUMP ELEC Q Q Q Q Q Q Q Q Q															
ELEC		PK	0.0	0.0	0.2	0.3	0.5	0.6	1.8	1.8	0.6	0.3	0.2	0.0	1.8
PK	9	EQ5308		CONT	ROLS										
Bidg. 157 CHW Equipment Bidg. 157 CHW Eq		ELEC	0	0	0	12	22	29	45	40	25	6	0	0	178
PACKAGED TERMINAL AIR CONDITIONER ELEC 25 12 196 323 609 766 933 923 621 316 148 22 4,893 983 983 983 983 983 983 983 383		PK	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
ELEC									157 CHW	Equipmen	t				
PK 3.1 3.1 3.1 3.3 3.3 3.5 3.6 3.8 3.7 3.5 3.3 3.1 3.1 3.1 3.8 10 EQ5215	10	-													
10 EQ5215 CONDENSER FANS-HEAT PUMP															
ELEC 2 1 23 45 83 107 148 128 87 41 18 2 683 PK 0.1 0.1 0.3 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.4 0.3 0.1 10 EQ5308 CONTROLS ELEC 4 2 16 18 53 58 64 62 53 44 11 2 387 PK 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1		FK	13.1		3.1	3.3	3.5	3.6	3.8	3.7	3.5	3.3	3.1	3.1	3.8
PK	10	EQ5215		COND	ENSER FA	NS-HEAT	PUMP								
10 EQ5308		ELEC	2	1	23	45	83	107	148	128	87	41	18	2	683
ELEC		PK	0.1	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.1	0.5
ELEC	10	EQ5308		CONT	ROLS										
Bldg. 159 CHW Equipment EQ1113			4			18	53	58	64	62	53	44	11	2	387
EQ1113		PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					L
ELEC 0 0 0 0 1646 1847 2143 2097 1674 1068 0 0 10,476 PK 0.0 0.0 0.0 0.0 3.6 3.7 3.8 3.8 3.4 2.3 0.0 0.0 3.8 11 EQ5203									159 CHW	Equipment	t				
PK 0.0 0.0 0.0 0.0 3.6 3.7 3.8 3.8 3.4 2.3 0.0 0.0 3.8 11 EQ5203	11														
11 EQ5203													7		<u> </u>
ELEC 0 0 0 0 232 269 316 308 246 130 0 0 1,501 PK 0.0 0.0 0.0 0.0 0.5 0.5 0.5 0.5 0.5 0.4 0.0 0.0 0.5 11 EQ5001		PK	0.0	0.0	0.0	0.0	3.6	3.7	3.8	3.8	3.4	2.3	0.0	0.0	3.8
PK 0.0 0.0 0.0 0.0 0.0 0.5 0.5 0.5 0.5 0.5	11	EQ5203		COND	ENSER FA	ANS-AIR C	LD CHIL	LER							
11 EQ5301				0	0	0	232	269	316	308	246	130	0	0	1,501
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PK	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.4	0.0	0.0	0.5
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	11	EQ5001		CHIL	LED WATE	ER PUMP -	CONST	ANT VOLUM	4E						
11 EQ5313 CONTROLS ELEC 0 0 0 0 223 216 223 223 216 223 0 0 1,325		ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
ELEC 0 0 0 0 223 216 223 223 216 223 0 0 1,325		PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ELEC 0 0 0 0 223 216 223 223 216 223 0 0 1,325	11	EQ5313		CONT	ROLS										
			0			0	223	216	223	223	216	223	0	0	1,325
		PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3

				E Ç	UIPM	ENT	ENER	GY C	consu	JMPTI	O N		·	
Pof	Equip						1.1.							
	Code	Jan	Feb	Mar			thly Cons	-						
210111	code	oan	reb	rial	Apr	May	June Dida t	July 52 CHW E	Aug	Sep	Oct	Nov	Dec	Total
12	EQ1307		PACK	AGED TEE	MINAL AI	ם כטווחדיי	•	32 CHW E	цигритен					
	ELEC	0	0	78	353	1401	2070	2844	2827	1500	510	07		
	PK	11.9	11.9	11.9	12.4	13.2	13.8	14.3	14.1	1588	518	87	0	11,767
					12.1	15.2		14.3	14.1	13.2	12.4	11.9	11.9	14.3
12	EQ5215		COND	ENSER FA	NS-HEAT	PIIMP								
	ELEC	0	0	11	54	199	298	494	406	231	66	12	0	1 750
	PK	0.3	0.3	0.8	1.2	1.6	1.8	1.9	1.9	1.8	1.2	0.8	0.4	1,769
												0.0	0.4	1.9
12	EQ5308		CONT	ROLS										
	ELEC	0	0	7	14	74	72	74	74	72	74	6	0	468
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
							Bldg.	155 CHW	Equipmen	t				***
13	EQ1113		AIR-	CLD RECI	PROCATIN	IG < 15 T	_							
	ELEC	468	407	949	1165	1786	2095	2126	2316	1884	911	683	535	15,325
	PK	7.7	8.3	7.6	7.7	8.7	9.6	9.4	9.4	8.8	7.6	7.8	8.4	9.6
13	EQ5203		COND	ENSER FA	NS-AIR C	LD CHILI	LER							
	ELEC	28	22	64	112	177	215	225	241	195	78	50	31	1,439
	PK	0.4	0.4	0.5	0.9	0.9	1.0	1.0	1.0	0.9	0.8	0.7	0.5	1.0
13	EQ5001				R PUMP -		ANT VOLUM							
	ELEC	78	73	115	130	141	149	145	157	141	116	87	78	1,412
	PK	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
12	EQ5313		CONT	ROLS										
13	ELEC	42	39	62	70	76	80	70	0.4	26				<u> </u>
	PK	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	42	757
		L				0.5	0.5	· · · · · · · · · · · · · · · · · · ·		0.3	0.3	0.3	0.3	0.3
14	EQ1307		PACK	AGED TER	MINAL AI	R CONDIT	TIONER							
	ELEC	433	389	1139	1734	2753	3406	3503	3790	2917	1446	945	343	22,797
	PK	14.2	14.2	14.2	14.9	15.8	16.5	17.1	17.0	15.9	14.9	14.2	14.2	17.1
														2
14	EQ5215		COND	ENSER FA	NS-HEAT	PUMP								
	ELEC	33	27	97	198	328	425	451	480	366	149	82	25	2,660
	PK	0.6	0.6	1.1	1.7	1.8	1.8	2.0	2.0	1.8	1.7	1.1	0.7	2.0
14	EQ5308		CONT	ROLS										
	ELEC	9	8	16	19	23	26	26	28	24	20	14	7	219
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
							Bldg.	158 CHW	Equipmen	t				
15	EQ1307			AGED TER	MINAL AI	R CONDIT	TIONER							
	ELEC	0	0	189	682	1512	2098	2772	2757	1665	547	138	0	12,359
	PK	9.5	9.5	9.5	9.9	10.6	11.0	11.4	11.3	10.6	9.9	9.5	9.5	11.4

				E Ç	UIPM	ENT	ENEF	RGY C	onst	ЈМРТІ	ON		·	
Ref	Equip					Mont	hly Cone	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
15	EQ5215		COND	ENSER FA	NS-HEAT	PUMP								
	ELEC	0	0	22	89	188	266	397	347	212	69	16	0	1,606
	PK	0.3	0.2	0.7	1.0	1.3	1.3	1.3	1.3	1.3	0.9	0.6	0.3	1.3
15	EQ5308		CONT	ROLS										
	ELEC	0	0	7	14	49	54	65	61	50	42	4	0	745
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
							Bidg. 1	141 CHW I					1	0.1
16	EQ1307		PACK	AGED TER	RMINAL AI	R CONDIT			- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1					
	ELEC	18	5	129	308	838	1078	1339	1342	880	453	92	7	6,489
	PK	3.1	3.1	3.1	3.3	3.5	3.6	3.8	3.7	3.5	3.3	3.1	3.1	3.8
16	EQ5215 ELEC	2			NS-HEAT									
	PK	0.1	0.1	0.3	0.4	0.5	0.5	189	185	123	56	11	1	890
		L 0.1			0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.1	0.5
16	EQ5308		CONT	ROLS										
	ELEC	2	2	11	19	74	72	74	74	72	74	8	2	486
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
							Bldgs.	260 & 261	CHW Eq	uipment				
17	ACC1		TYPI	CAL AIR	COOLED R	RECIP CHI			•	•				
	ELEC	0	0	0	0	3586	4612	5734	5473	3459	1815	0	. 0	24,678
	ÞK	0.0	0.0	0.0	0.0	18.3	19.9	21.1	20.9	18.3	17.3	0.0	0.0	21.1
17	EQ5001		CHIL	LED WATE	R PUMP -	CONSTA	ANT VOLUM	4E						
	ELEC	0	0	0	0	136	179	216	202	133	59	0	0	925
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
17	EQ5300		CONT	ROL PANE	L & INTE	RLOCKS								
	ELEC	0	0	0	0	368	484	584	546	359	159	0	0	2,500
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
17	EQ5001		OUT.								*	•		
17	ELEC	. 0	0	LED WATE 0	R PUMP - 0	CONSTA	ANT VOLUM		, ,,,,			_		r
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	202	133	59	0	0	925
	• • •	0.0	0.0	0.0	0.0	0.4			0.4	0.4	0.4	0.0	0.0	0.4
18	ACC1		TYPI	CAL AIR	COOLED R	RECIP CHI		268 CHW	Equipmen	t				
	ELEC	655	535	2054	2842	4104	4580	4921	5396	4152	2389	1626	637	33,891
	PK	11.3	12.3	14.0	19.0	20.9	22.8	23.6	23.4	21.9	19.0	17.5	14.2	23.6
10	B05001													
18	EQ5001	50			R PUMP -		ANT VOLUM							
	ELEC PK	0.6	0.6	0.6	130	141	139	137	157	132	122	102	68	1,365
	£17	0.6	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6

				E Q	UIPM	ENT	ENER	GYC	onsu	иметі	0 N			
2.5														
	ndarb						hly Cons	-						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	0ct	Nov	Dec	Total
18	EQ5300		CONT	ROL PANE	L & INTE	RLOCKS								
	ELEC	106	102	214	232	252	248	244	281	236	218	182	122	2,437
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
							Bldg 1	42 fans						
1	TYPFAN		GENE	RIC FAN			Diag.	1-12 14110						
	ELEC	1242	1119	1388	1268	1376	1357	1308	1412	1288	1352	1263	1271	15,644
	PK	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
2	TYPFAN		GENE	RIC FAN			Bldg. I	23 fans					-	
-	ELEC	1786	1613	1786	1728	1786	1728	1786	1786	1728	1786	1728	1786	21,024
	PK	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
		·						126 fans						
3	TYPFAN		GENE	RIC FAN			Diug.	120 14113						
	ELEC	905	787	1037	947	932	921	896	962	873	866	936	879	10,942
	PK	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
4	TYPFAN		GENE	RIC FAN			Bldg.	131 fans						
•	ELEC	2743	2406	3142	2867	2822	2787	2711	2913	2643	2621	2833	2661	[33,140]
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	2661	11.2
		<u> </u>											11.2	11.2
5	TYPFAN		GENE	RIC FAN			Blug.	129 fans						
	ELEC	3465	3163	3765	3430	3377	3323	3223	3478	3162	3136	3430	3503	40,457
	PK	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
_	munna.		~~~				Bldg. 1	51 fans					-	
6	TYPFAN ELEC	1057		RIC FAN	1016									
	PK	1257	1135	1257	1216	1257	1216	1257	1257	1216	1257	1216	1257	14,795
	IX	1.7	1.7	1.7	1.7				1.7	1./	1.7	1.7	1.7	1.7
7	TYPFAN		GENE	RIC FAN			Bldg.	154 fans						
	ELEC	1058	956	1058	1024	1058	1024	1058	1058	1024	1058	1024	1058	12,463
	PK	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
							Bldg.	156 fans						
8	TYPFAN			RIC FAN			_							
	ELEC	895	809	895	866	895	866	895	895	866	895	866	895	10,540
	PK	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
9	TYPFAN		CENE	RIC FAN			Bldg.	157 fans						
,	ELEC	1946	1758	1946	1883	1946	1883	1946	1946	1002	1016	1000	1046	22.014
	PK	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	22,914
		L								2.0	2.0	2.0	2.0	2.0
10	TYPFAN		GENE	RIC FAN			piag.	159 fans						
	ELEC	1753	1584	1753	1697	1753	1697	1753	1753	1697	1753	1697	1753	20,644
	PK	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
		,												

				E Q	UIPM	ENT	ENER	GY C	onsu	меті	O N			
Ref	Equip -					Mont	hlv Cone	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
							Bldg. 1	52 fans		-				
11	TYPFAN		GENE	RIC FAN			5							
	ELEC	3734	3373	3734	3614	3734	3614	3734	3734	3614	3734	3614	3734	43,967
	PK	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
12	TYPFAN		GENE	RIC FAN			Bldg. 1	55 fans						
14	ELEC	2495	2255	2625	2543	2715	2866	2759	2990	2640	2599	2371	2429	31,288
	PK	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
							Bldg. I:	58 fans						
13	TYPFAN		GENE	RIC FAN			- 0							
	ELEC	4120	3722	4120	3988	4120	3988	4120	4120	3988	4120	3988	4120	48,515
	PK	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
14	TYPFAN		CENE	RIC FAN			Bldg. 1	41 fans						
1.3	ELEC	1898	1714	1898	1836	1898	1836	1898	1898	1836	1898	1836	1898	22,342
	PK	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
		<u> </u>					Bldg. 2	60 fans	-					
15	TYPFAN		GENE	RIC FAN										
	ELEC	521	470	521	504	521	504	521	521	504	521	504	521	6,132
	PK	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
16	TYPFAN		GENE	RIC FAN			Bldg.	261 fans						
10	ELEC	521	470	521	504	521	504	521	521	504	521	504	521	6,132
	PK	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0,232
							Bldg.	268 fans						
17	TYPFAN		GENE	ERIC FAN			2145							
	ELEC	1468	1323	1572	1487	1588	1562	1520	1642	1487	1562	1399	1430	18,040
	PK	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
1			WATE	ERTUBE BO	TLER		Bldg.	142 HW E	quipment					
_	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	EQ5020				R CIRCUL									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	EQ5311		BOII	LER CONTR	OLS									
-	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
							Bldg.	123 HW E	Equipment					
2	EQ2201				IIT HEATE									
	GAS	109	110	29	63	0	0	0	0	0	0	47	106	464
	PK	1.5	1.5	0.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5

				E Q	UIPM	ENT	ENEF	RGY C	onsu	мрті	O N			
Ref	Equip					Mant	. h]							
	Code	Jan	Feb	Mar	Apr	mont	June	July			0-5	N		
210111	couc	oan	reb	nai	Apr	May	oune	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5250		UNIT	HEATER I	FAN									
	ELEC	72	65	62	60	0	0	0	0	0	. 0	64	70	395
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
							Bldg. 1	26 HW Eq	uipment					
3			WATE	RTUBE BO	ILER		Č	•						
	GAS	145	133	59	56	0	0	0	0	0	0	65	145	604
	PK	2.7	2.7	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.8	2.7	2.7
3	EQ5020				R CIRCULA									<u> </u>
	ELEC	204	183	186	180	0	0	0	0	0	0	180	203	1,136
	PK	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
,	EQ5311		DOTE	DD GOVERN	~~ ~									
3	ELEC	34	30	ER CONTR	30	0	0	•						
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	34	189
					0.1	0.0				0.0	0.0	0.1	0.1	0.1
4			WATE	RTUBE BO	ILER		Diug.	131 HW E	quipinent					
	GAS	127	126	55	51	0	0	0	0	0	0	58	128	545
	PK	2.4	2.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.4	2.4
4	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	UMP							
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2,433
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
4	B05311			PD 001										
4	EQ5311 ELEC	93	84	ER CONTR		•	•		•					
	PK	0.1	0.1	0.1	90	0.0	0.0	0.0	0.0	0.0	0.0	90	93	543
				0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
4	EQ5020		HEAT	ING WATE	R CIRCULA	TION P	UMP	•						
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2,433
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
							Bldg.	129 HW E	quipment					
5			WATE	RTUBE BO	ILER		_							
	GAS	76	70	41	39	0	0	0	. 0	0	0	39	68	333
	PK	1.5	1.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.5	1.5
-	FOE 030			TWO=	n arn	mzo: ::								
5	EQ5020 ELEC	1771			R CIRCULA			•	-	_	_			[
	PK	2.4	1599 2.4	2.4	2.4	0.0	0	0	0	0	0	1714	1771	10,339
	- 1	L_2.4	<u> </u>	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4
5	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

				E Q	UIPM	ENT	ENER	G Y C	onsu	мрті	0 N			
Ref	Equip -	·				Mont	hlar Cong	umntion						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Do.	m-5-1
		-			npi	r.a.y		-	_	sep	OCC	NOV	Dec	Total
6	EQ2263		ELEC'	TRIC RES	ISTANCE H	EAT WIT	_	l HW Equi	pment					
	ELEC	571	554	131	127	0	0	. 0	0	0	0	141	517	2,041
	PK	4.4	4.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3.7	4.4	4.4
		•						34 HW Equ						
7	EQ2263		ELEC'	TRIC RES	ISTANCE H	EAT WIT		74 IIII Equ	принене					
	ELEC	1190	1168	253	211	0	0	0	0	0	0	253	1143	4,218
	PK	8.7	8.9	7.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	7.7	8.9	8.9
							Bldg. I	56 HW Eq	uipment					
8			WATE	RTUBE BO	ILER		J	•	•					
	GAS	63	62	13	10	0	0	0	0	0	0	13	60	221
	PK	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
8	EQ5020		HEAT	ING WATER	R CIRCULA	TION PU	MP							
	ELEC	83	83	47	46	0	0	0	0	0	0	46	85	390
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
_														
8	EQ5311			ER CONTRO										
	ELEC PK	54	55	31	30	0	0	0	0	0	0	30	56	257
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
9	EQ2201		GAS	EIDED IM	IT HEATER		Bldg.	157 HW Eq	uipment					
_	GAS	22	20	8	8	0	0	0	0	0	0			
	PK	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8 0.0	20	85
					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
9	EQ5250		UNIT	HEATER I	FAN									
	ELEC	15	13	15	14	0	0	0	0	0	0	14	15	87
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
							Bldg. 1	59 HW Eq	uipment					
10	EQ2201		GAS 1	FIRED UN	IT HEATER		ū	-	•					
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	EQ5250		UNIT	HEATER I	FAN									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
							Bldg. 1	152 HW Eq	uipment					
11	EQ2201				IT HEATER									
	GAS	169	170	45	28	0	0	0	0	0	0	46	161	619
	PK	1.2	1.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.2	1.2
	HOESES								•					
11	EQ5250	100		HEATER I		_	_	_						
	ELEC PK	0.1	93	103	99	0	0	0	0	0	0	99	103	599
	. K	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	0 N			·
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
							Bldg. 1:	55 HŴ Eqi	uipment					
12				RTUBE BO			_							
	GAS	63	56	20	20	0	0	0	0	0	0	23	61	243
	PK	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
12	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	мр							
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2,433
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
														
12	EQ5311			ER CONTR										
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
	FORDER		63.6				Bldg.	158 HW E	quipment					
13	EQ2201 GAS	108	105	FIRED UN 24	IT HEATER 21	0	0	0		•		0.5		
	PK	1.1	1.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	25 1.0	103 1.1	1.1
	r.	1.1	1.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1
13	EQ5250		UNIT	HEATER	FAN									
	ELEC	. 88	81	67	64	0	0	0	0	0	0	64	88	453
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
							Bldg. 1	141 HW E	quipment					
14	EQ2263			TRIC RES	ISTANCE H									
	ELEC	832	801	182	169	0	0	0	0	0	0	188	767	2,939
	PK	3.7	3.7	2.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
15			WATE	RTUBE BO	TT.ER		Bldgs.	260 & 261	HW Equip	ment				
	GAS	44	41	17	16	0	0	0	0	0	0	16	40	174
	PK	0.7	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
15	EQ5020		HEAT	ING WATE	R CIRCULA	ATION P	JMP							
	ELEC	275	249	275	266	0	0	0	0	0	0	266	275	1,607
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
15	EQ5311		BOIL	ER CONTR	ols									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
												-		
15	-				R CIRCULA									<u></u>
	ELEC	275	249	275	266	0	0	0	0	0	0	266	275	1,607
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
16			warr	RTUBE BO	TLER		Bldg. 2	68 HW Eq	uipment					
	GAS	65	67	31	27	0	0	0	0	0	0	30	69	290
	PK	1.2	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.3	1.3
									٠.٠		3.0	3.5	2.5	1.5

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	O N			
Ref	Equip					Mont	hly Cons	umption -						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
16	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2,433
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
16	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0 - 0	0.0	0.0	0.0	0.1	0.1	0.1

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By: HUITT & ZOLLARS

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2

ECO B1 - WATER COOLED CENTRIFUGAL

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code May Sep Nov Jan Feb Mar Apr Aug Oct June July Dec Total 0 LIGHTS ELEC 96000 86815 102496 91856 99248 98352 92752 102496 91856 99248 91856 92752 1,145,727 ÞΚ 548.6 548.6 548.6 548.6 548.6 548.6 548.6 548.6 548.6 548.6 548.6 548.6 548.6 1 MISC LD ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 MISC LD GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 MISC LD OTT. 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4 MISC LD P STEAM 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 MISC LD P HOTH20 0 0 0 0 0 0 0 0 . 0 O 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 0.0 0.0 0.0 0.0 6 MISC LD P CHILL 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 11383 11016 11383 11383 11016 11383 0 0 67,565 PK 0.0 0.0 0.0 15.3 0.0 15.3 15.3 15.3 15.3 15.3 0.0 0.0 15.3 BASE UTILITY CHILLD 0 0 0 0 7485 7243 7485 7485 7243 7485 0 0 44,425 PK 0.0 0.0 0.0 0.0 10.1 10.1 10.1 10.1 10.1 0.0 0.0 10.1 1 EQ1008S 3-STG CENTRIFUGAL < 300 TONS ELEC 0 0 0 0 14895 14992 17462 20527 15030 19095 0 0 102,000 PK 0.0 0.0 0.0 0.0 92.3 98.7 97.2 102.2 91.0 85.4 0.0 0.0 102.2 1 EQ5100 COOLING TOWER FANS ELEC 0 n 0 0 4261 5617 3829 4381 4768 4731 0 0 27,588 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2
ECO B1 - WATER COOLED CENTRIFIGAL

----- EQUIPMENT ENERGY CONSUMPTION ---------- Monthly Consumption -----Ref Equip Mar Apr Num Code Jan Feb May June July Aug Sep Oct Nov Dec Total 1 E05100 COOLING TOWER FANS WATER 0 0 0 0 99 102 117 136 100 124 0 0 678 PK 0.0 0.0 0.0 0.0 0.6 0.6 0.6 0.6 0.6 0.6 0.0 0.0 0.6 1 EQ5001 CHILLED WATER PUMP -CONSTANT VOLUME ELEC 0 0 4261 0 0 5617 3829 4381 4768 9447 0 0 32,303 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9 1 E05010 CONDENSER WATER PUMP-CV (HIGH EFFIC.) ELEC 0 0 0 0 4222 3203 2878 3293 3584 7101 0 0 24,282 PK 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.2 0.0 11.2 1 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 286 257 294 320 634 0 0 2,168 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 2 EQ1008L 3-STG CENTRIFUGAL > 300 TONS ELEC 0 0 0 0 53540 69020 84614 85947 61528 12435 0 0 367,084 PK 0.0 0.0 0.0 0.0 233.2 249.9 257.1 245.0 245.0 208.9 257.1 0.0 0.0 2 EQ5100 COOLING TOWER FANS ELEC 0 0 0 0 6826 8482 9802 7440 9653 2046 0 0 44,249 PK 0.0 0 0 0.0 0.0 18.6 18.6 18.6 18.6 18.6 18.6 0.0 0.0 18.6 2 E05100 COOLING TOWER FANS WATER 0 0 0 0 401 513 616 619 449 103 0 0 2,701 PK 0.0 0.0 0.0 0.0 1.7 1.8 1.7 1.7 1.7 1.6 0.0 0.0 1.8 2 E05001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 13689 17009 19657 19359 14920 4103 0 0 88,737 PK 0.0 0.0 0.0 0.0 37.3 37.3 37.3 37.3 37.3 37.3 0.0 0.0 2 EQ5010 CONDENSER WATER PUMP-CV(HIGH EFFIC.) ELEC 0 0 0 0 10937 13589 15705 15466 11920 3278 0 0 70,894 PK 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 CONTROL PANEL & INTERLOCKS 2 EQ5300 ELEC 0 0 . 0 0 367 456 527 519 400 110 0 0 2.379 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO B2 - WATER COOLED CENTRIFUGAL VFD

				E (QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption	۱					
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
•	LIGHTS													
U	ELEC	96000	86815	102496	91856	99248	98352	92752	102496	91856	99248	91856	00750	1 115 505
	PK	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	92752 548.6	1,145,727 548.6
	WT00 TD													
1	MISC LD ELEC	0	0		0	•			_					
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0
	FK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
-1	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	•
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	Y									
	CHILLD	0	0	0	0	11383	11016	11383	11383	11016	11383	0	0	67,565
	PK	0.0	0.0	0.0	0.0	15.3	15.3	15.3	15.3	15.3	15.3	0.0	0.0	15.3
2		•	DAG	SE UTILIT	v									
	CHILLD	0	0	0	0	7485	7243	7485	7485	7243	7485	0	0	44.405
	PK	0.0	0.0	0.0	0.0	10.1	10.1	10.1	10.1	10.1	10.1	0.0	0.0	44,425 10.1
1	EQ1008S			STG CENTR	IFUGAL <	300 TON	S							
	ELEC	0	0	0	0	14895	14992	17462	20527	15030	19095	0	0	102,000
	PK	0.0	0.0	0.0	0.0	92.3	98.7	97.2	102.2	91.0	85.4	0.0	0.0	102.2
1	EQ5100		COC	DLING TOW	ER FANS									
	ELEC	0	0	0	0	5617	4261	3829	4381	4768	4731	0	0	27,588
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9

by. Hotti & Bolinko

ECO B2 - WATER COOLED CENTRIFUGAL VFD

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

				E Q	UIPI	меит	ENE	RGY (CONS	TAME	I O N			
Ref	Equip					Mont	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	99	102	117	136	100	124	0	0	678
	PK	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.6
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	5617	4261	3829	4381	4768	9447	0	0	32,303
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
1	EQ5010		COND	ENSER WA	TER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	4222	3203	2878	3293	3584	7101	0	0	24,282
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	377	286	257	294	320	634	0	0	2,168
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	EQ1009		3-ST	G CTV WI	TH VARI	ABLE FRE	QUENCY D	R V						
	ELEC	0	0	0	0	52023	66545	80185	80541	58692	13179	0	0	351,164
	PK	0.0	0.0	0.0	0.0	264.0	263.9	252.5	256.3	253.6	234.0	0.0	0.0	264.0
2	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	1686	3004	4587	5404	2810	89	0	0	17,581
	PK	0.0	0.0	0.0	0.0	12.1	13.5	16.5	18.6	14.4	9.5	0.0	0.0	18.6
2	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	400	510	612	614	446	104	0	0	2,687
	PK	0.0	0.0	0.0	0.0	1.8	1.8	1.7	1.7	1.7	1.7	0.0	0.0	1.8
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13689	17009	19657	19359	14920	4103	0	0	88,737
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
2	EQ5010	-	COND	ENSER WA	TER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	10937	13589	15705	15466	11920	3278	0	0	70,894
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	367	456	527	519	400	110	0	0	2,379
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4
ECO B3 - WATER COOLED SCREW

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec Total 0 LIGHTS ELEC 96000 86815 102496 91856 99248 98352 92752 102496 91856 99248 91856 92752 1,145,727 548.6 548.6 548.6 548.6 548.6 548.6 PK 548.6 548.6 548.6 548.6 548.6 548.6 548.6 1 MISC LD ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 MISC LD GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 MISC LD OTT. 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4 MISC LD P STEAM 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 MISC LD P HOTH20 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0.0 6 MISC LD P CHILL 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 11383 11016 11383 11383 11016 11383 0 0 67,565 PK 0.0 0.0 0.0 0.0 15.3 15.3 15.3 15.3 15.3 15.3 0.0 0.0 15.3 BASE UTILITY CHILLD 0 0 0 0 7485 7243 7485 7485 7243 7485 0 0 44,425 PK 0.0 0.0 0.0 0.0 10.1 10.1 10.1 10.1 10.1 10.1 0.0 0.0 10.1 1 E01008S 3-STG CENTRIFUGAL < 300 TONS ELEC 0 0 0 0 14895 14992 17462 20527 15030 19095 0 0 102,000 PK 0.0 0.0 0.0 0.0 92.3 98.7 97.2 102.2 91.0 85.4 0.0 0.0 102.2 1 EQ5100 COOLING TOWER FANS ELEC 0 0 0 0 5617 4261 3829 4381 4768 4731 0 0 27,588 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9

ECO B3 - WATER COOLED SCREW

_														
							_	_						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	99	102	117	136	100	124	0	0	678
	PK	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.6
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	4E						
	ELEC	0	0	0	0	5617	4261	3829	4381	4768	9447	0	0	32,303
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
1	EQ5010		COND	ENSER WA	TER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	4222	3203	2878	3293	3584	7101	0	0	24,282
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	377	286	257	294	320	634	0	0	2,168
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	YSCRW22		YORK	W.C. SC	REW CHI	LLER								
	ELEC	0	0	0	0	57983	74676	91911	93348	67025	13048	0	0	397,991
	PK	0.0	0.0	0.0	0.0	274.1	292.0	286.2	299.1	286.2	247.3	0.0	0.0	299.1
2	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	6826	8482	9802	9653	7440	2046	0	0	44,249
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
2	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	405	518	622	626	454	104	0	0	2,729
	PK	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	1.7	0.0	0.0	1.8
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13689	17009	19657	19359	14920	4103	0	0	88,737
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
2	EQ5011		COND	ENSER WA	TER PUM	P-CV (MED	IUM EFFI	C.)						
	ELEC	0	0	0	0	10937	13589	15705	15466	11920	3278	0	. 0	70,894
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	367	456	527	519	400	110	0	0	2,379
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO B4 - GAS ENGINE DRIVEN CHILLER

f	Equip -					Mon	thly Con	sumption						
m	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
0	LIGHTS													
	ELEC	96000	86815	102496	91856	99248	98352	92752	102496	91856	99248	91856	92752	1,145,
	PK	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548
	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
ı	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
			BAS	SE UTILIT	Y									
	CHILLD	0	0	0	0	11383	11016	11383	11383	11016	11383	0	0	67,
	PK	0.0	0.0	0.0	0.0	15.3	15.3	15.3	15.3	15.3	15.3	0.0	0.0	1
!			BAS	SE UTILIT	Y									
	CHILLD	0	0	0	0	7514	7272	7514	7514	7272	7514	0	0	44,
	PK	0.0	0.0	0.0	0.0	10.1	10.1	10.1	10.1	10.1	10.1	0.0	0.0	1
	EQ1008S		3-8	STG CENTR	IFUGAL <	300 TON	S							
	ELEC	. 0	0	0	0	14895	13609	15555	16786	15030	19095	0	0	94,
	PK	0.0	0.0	0.0	0.0	92.3	98.7	95.8	99.8	91.0	85.4	0.0	0.0	9
-	EQ5100		cod	OLING TOW	ER FANS									
	ELEC	0	0	0	0	5617	4261	3829	4381	4768	4731	0	0	27,
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	1.

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO B4 - GAS ENGINE DRIVEN CHILLER

------ EQUIPMENT ENERGY CONSUMPTION -------Ref Equip ----- Monthly Consumption -----Num Code Jan Feb June Mar Apr May July Aug Sep Oct Nov Dec Total 1 E05100 COOLING TOWER FANS WATER 0 0 0 0 92 104 110 100 124 0 629 PK 0.0 0.0 0.0 0.6 0.6 0.6 0.6 0.6 0.6 0.0 0.0 0.6 1 EQ5001 CHILLED WATER PUMP -CONSTANT VOLUME ELEC 0 0 0 0 5617 4261 3829 4381 4768 9447 0 0 32,303 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9 1 EQ5010 CONDENSER WATER PUMP-CV (HIGH EFFIC.) ELEC 0 0 0 0 4222 3203 2878 3293 3584 7101 0 0 24,282 PK 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.2 0.0 0.0 11.2 1 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 377 286 257 294 320 634 0 0 2.168 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 ENGINE DRIVEN CHILLER, 80 TONS GAS 0 0 0 0 5668 7513 9362 9800 6585 1292 0 0 40.220 PK 0.0 0.0 0.0 0.0 30.3 30.7 31.4 31.8 31.0 24.8 0.0 0.0 31.8 2 E05100 COOLING TOWER FANS ELEC 0 0 0 0 8221 10214 11805 11626 8960 2464 0 0 53,290 PK 0.0 22.4 0.0 0.0 0.0 22.4 22.4 22.4 22.4 22.4 0.0 0.0 22.4 2 E05100 COOLING TOWER FANS WATER 0 0 0 0 504 659 800 825 569 127 0 0 3,482 PK 0.0 0.0 0.0 0.0 2.3 2.4 2.4 2.4 2.4 2.1 0.0 0.0 2.4 2 E05001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 13689 17009 19657 19359 0 0 88,737 PK 0.0 0.0 0.0 0.0 37.3 37.3 37.3 37.3 0.0 0.0 37.3 2 EQ5010 CONDENSER WATER PUMP-CV (HIGH EFFIC.) ELEC 0 0 0 10937 13589 15705 15466 11920 3278 0 0 70.894 PK 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 2 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 367 456 527 519 400 110 0 0 2,379 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 HEATER FOR ENGINE DRIVEN CHILLER ELEC 112 101 112 108 57 40 33 34 48 95 108 957 112 PK 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO C - REPLACE BLRS WITH BOILER PLANT

• • • •				E (QUIPI	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	96000	86815	102496	91856	99248	98352	92752	102496	91856	99248	91856	92752	1,145,72
	PK	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6	548.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	(
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	(
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
1			BAS	E UTILIT	Y									
	HOTLD	839	758	839	812	0	0	0	0	0	0	812	839	4,90
	PK	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.
1			HIG	H EFFICII	ENCY MOD	ULAR FIR	ETUBE BO	IL.						
	GAS	4050	3898	1161	888	0	0	0	0	0	0	1238	3755	14,99
	PK	20.0	20.0	8.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0	8.0	20.0	20.
1	EQ5020		HEA	TING WAT	ER CIRCU	LATION P	UMP							
	ELEC	5580	5040	5580	5400	0	0	0	0	0	0	5400	5580	32,58
	PK	7.5	7.5	7.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	7.5	7.5	7.
1	EQ5311		BOI	LER CONTI	ROLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	54:
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.:

0.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO C - REPLACE BLRS WITH BOILER PLANT

				E Q	UIPM	E N T	ENER	GY C	onsu	мрті	O N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2			HIGH	EFFICIE	NCY MODU	LAR FIRE	TUBE BOI	L.						
	GAS	48	111	0	0	0	0	0	0	0	0	0	54	213
	PK	2.2	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	4.6
2	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	270	240	0	0	0	0	0	0	0	0	0	203	713
	PK	7.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	7.5
2	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	5	4	0	0	0	0	0	0	0	0	0	3	12
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1

01 Card - Job Information

Project: 03-0185.06 EEAP BOILER-CHILLER STUDY

Location: FT SAM HOUSTON, TEXAS

Client: CORPS OF ENGINEERS - FORT WORTH, TEXAS

Program User: HUITT-ZOLLARS, INC.

Comments: AREA 500, BLDGS. 590, 591, AND 592

Card 08-	Card 08 Climatic Information													
	Summer	Winter	Summer	Summer	Winter		Summer	Winter						
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground						
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect						
SANANTON	i													
		Load Sec	tion Alte	rnative #1										

Card 19- Load Alternative - Number Description

EXISTING CONDITION

Card 20				Genera	l Room	Paramete:	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 590	145	145	8	1.5		10			
10	10	BLDG 591	145	145	8	1.5		10			
15	15	592 ADMIN	74	74	8	1.5		10			
20	20	592 BARRACKS	299.5	300	8	1.5		10			

Card 21 Thermostat Parameters										
Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet	
Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On	
Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor	
78	50	78		70	70					
78	50	78		70	70					
78	50	78		70	70					
78	50	78		70	70					
	Cooling Room Design DB 78 78	Cooling Room Room Design Design DB RH 78 50 78 50	CoolingRoomCoolingRoomDesignT'statDesign DBRHDriftpoint785078785078785078	CoolingRoomCoolingCoolingRoomDesignT'statT'statDesign DBRHDriftpointSchedule785078785078785078	CoolingRoomCoolingCoolingHeatingRoomDesignT'statT'statRoomDesign DBRHDriftpointScheduleDesign DB785078707850787078507870	CoolingRoomCoolingCoolingHeatingHeatingRoomDesignT'statT'statRoomT'statDesign DBRHDriftpointScheduleDesign DBDriftpoint785078707078507870707850787070	CoolingRoomCoolingCoolingHeatingHeatingHeatingRoomDesignT'statT'statRoomT'statT'statDesign DBRHDriftpointScheduleDesign DBDriftpointSchedule785078707078507870707850787070	CoolingRoomCoolingCoolingHeatingHeatingHeatingT'statRoomDesignT'statT'statRoomT'statT'statLocationDesign DBRHDriftpointScheduleDesign DBDriftpointScheduleFlag785078707078507870707850787070	CoolingRoomCoolingCoolingHeatingHeatingHeatingT'statMass /RoomDesignT'statT'statRoomT'statT'statLocationNo. HrsDesign DBRHDriftpointScheduleDesign DBDriftpointScheduleFlagAverage785078707078507870707850787070	

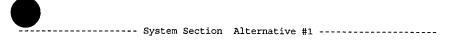


Card 22	Card 22 Roof Parameters												
		Roof											
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof				
Number	Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha				
5	1	NO	87.5	88	0.14	37		68	_				
10	1	NO	87.5	88	0.14	37		68					
20	1	NO	141.5	142	0.06	37							

	Card 24				Wall Pa	arameters				
						Wall				Ground
	Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
	Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
	5	1	583	10	0.24	58	350			
	5	2	147.5	10	0.24	58	80			
	5	3	583	10	0.24	58	170			
	5	4	147.5	10	0.24	58	260			
	10	1	583	10	0.24	58	350			
	10	2	147.5	10	0.24	58	80			
	10	3	583	10	0.24	58	170			
	10	4	147.5	10	0.24	58	260			
	15	1	72	11.3	0.20	58	0			
1		2	45.5	11.3	0.20	58	90			
•		3	72	11.3	0.20	58	180			
	15	4	62	11.3	0.20	58	135			
	20	1	103.1	56.5	0.20	58	0			
	20	2	181.4	56.5	0.20	58	90			
	20	3	72	45.2	0.20	58	180			
	20	4	193.6	56.5	0.20	58	135			
	20	5	169	56.5	0.20	58	270			
	20	6	45	56.5	0.20	58	225			
	20	7	156	56.5	0.20	58	315			

Card 2	5				V	Wall/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Туре	Ret. Air	Transmittance	Reflectance
5	1	5	2.5	66	1.1	0.67					
5	2	5	2.5	6	1.1	0.67					
5	3	5	2.5	75	1.1	0.67					
5	4	5	2.5	75	1.1	0.67					
10	1	5	2.5	66	1.1	0.67					
10	2	5	2.5	6	1.1	0.67					
10	3	5	2.5	75	1.1	0.67					
10	4	5	2.5	75	1.1	0.67					
15	1	8	2.5	8	1.1	0.67					
	3	8	2.5	8	1.1	0.67					
15	4			16.3	1.1	0.67					
20	1	5	2.5	32	1.1	0.67					
20	2	5	2.5	80	1.1	0.67					

				Pct Glass		all/Glass Par		Internal			Inside
Room	Wall	Glass		or No. of		Shading	Shading			Vicible	Visible
Number	Number	Length		Windows		Coefficient	_	Type		Transmittance	Reflectance
20	3	5	2.5	32	1.1	0.67		-11-			Refrectance
0	4	5	2.5	116	1.1	0.67					
20	5	5	2.5	80	1.1	0.67					
20	7	5	2.5	80	1.1	0.67					
ard 26						Schedules					
loom									Auxiliary		
umber	People	Lights	Ventil	ation In	filtration	Minimum I	Fans	Fan	Fan	Exhaust Control	ls
		P FSHBAR				1					
10		P FSHBAR									
15		C FSHOFF									
20	FSHBARKI	P FSHBAR	IKL								
ard 27	'				People						
m	People	People	People	People	Lighting		ghting			Daylighting erence Reference	
amber	Value	Units	_	Latent							ce
	47	PEOPLE	250				HRAE2	ictor ket	. All POI	nt 1 Point 2	
.0	47	PEOPLE	250			WATT-SF ASI				•	
.5	13	PEOPLE	250	200	2.2		HRAE2				
L5 20	13 307	PEOPLE PEOPLE	250 250	200 200	2.2	WATT-SF ASI					
						WATT-SF ASI	HRAE2				
10	307	PEOPLE	250	200	2.0	WATT-SF ASI	HRAE2 HRAE2	nt			
0	307	PEOPLE	250	200	2.0	WATT-SF ASI WATT-SF ASI Miscellaneous	HRAE2 HRAE2	nt Percent		Percent	
0 ard 28	307	PEOPLE	250	200 Ener	2.0	WATT-SF ASI WATT-SF ASI Miscellaneous	HRAE2 HRAE2 s Equipmen Energy	Percent	Percent		
0 ard 28	307	PEOPLE	250	200 Ener	2.0 rgy Energ	WATT-SF ASI WATT-SF ASI Miscellaneous Y mp Schedule	HRAE2 HRAE2 s Equipmen Energy	Percent of Load	Percent	Percent d Misc. Sens	
0 Card 28 Coom Number	307 Misc Equipment Number	PEOPLE nt Equip Descr BARRA	250 ment rip	200 Ener Cons	2.0 rgy Energy sump Consu	WATT-SF ASI WATT-SF ASI Miscellaneous Y mp Schedule	HRAE2 HRAE2 S Equipmer Energy Meter Code	Percent of Load	Percent Misc. Loa	Percent d Misc. Sens	Radiant Option
com Tumber	307 Misc Equipmer Number 1	PEOPLE nt Equip Descr BARRA BARRA	250 ment rip cCKS EQ	Ener Cons Valu	2.0 rgy Energ sump Consu ne Units WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Y Imp Schedule Code SF FSHBARRL	HRAE2 S Equipmen Energy Meter Code NONE NONE	Percent of Load	Percent Misc. Loa	Percent d Misc. Sens	Radiant Option
0 ward 28 coom fumber 0 5	307 Misc Equipment Number 1	PEOPLE nt Equip Descr BARRA BARRA OFFICE	ment rip CCKS EQ CCKS EQ	Ener Cons Valu 0.9 0.9	2.0 rgy Energ sump Consu ue Units WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Y Imp Schedule Code SF FSHBARRL SF FSHBARRL	HRAE2 S Equipmer Energy Meter Code NONE NONE	Percent of Load	Percent Misc. Loa	Percent d Misc. Sens	Radiant Option
0 Card 28 Coom Number	307 Misc Equipmer Number 1	PEOPLE nt Equip Descr BARRA BARRA OFFICE	250 ment rip cCKS EQ	Ener Cons Valu	2.0 rgy Energ sump Consu ue Units WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Y Imp Schedule Code SF FSHBARRL	HRAE2 S Equipmer Energy Meter Code NONE NONE	Percent of Load	Percent Misc. Loa	Percent d Misc. Sens	Radiant Option
oom cumber 0 5	Misc Equipmen Number 1 1	PEOPLE The Equip Describer Barra Barra Barra Barra	250 ment tip tCKS EQ tCKS EQ tCKS EQ	Ener Cons Valu 0.9 0.9 0.8 1.0	2.0 rgy Energy sump Consulate Units WATT- WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Miscel	HRAE2 HRAE2 S Equipmer Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens to Ret. Air	Radiant Option Fraction Air Pa
ard 28 oom umber 0 5	Misc Equipment Number 1 1	nt Equip Descr BARRA BARRA OFFIC BARRA	250 ment rip ACKS EQ ACKS EQ EE EQ ACKS EQ	Ener Cons Valu 0.9 0.9 0.8 1.0	2.0 Fgy Energy Sump Consulate WATT- WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous TY timp Schedule Code SF FSHBARRL SF FSHBARRL SF FSHBARRL SF FSHBARRL	HRAE2 HRAE2 S Equipmen Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens	Radiant Option Fraction Air Pa
ard 28 com umber 0 5 0	Misc Equipment Number 1 1	nt Equip Descr BARRA OFFIC BARRA	ment cip cKS EQ cKS EQ cKS EQ cKS EQ	Ener Cons Valu 0.9 0.9 0.8 1.0	2.0 rgy Energy sump Consulae Units WATT- WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Miscellaneou	HRAE2 HRAE2 S Equipmer Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens to Ret. Air	Radiant Option Fraction Air Pa
ard 28 com umber 0 5 0 ard 29	Misc Equipment Number 1 1	DEOPLE The Equipy Describer BARRA OFFICE BARRA OFFICE BARRA	ment cip CCKS EQ CCKS EQ CCKS EQ	Ener Cons Valu 0.9 0.8 1.0	2.0 rgy Energe Consume Units WATT-WATT-WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Miscel	HRAE2 HRAE2 S Equipmer Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens to Ret. Air Reheat Minimur	Radiant Option Fraction Air Pa
ard 28 coom umber 0 5 0 ard 29 coom	Misc Equipmen Number 1 1	PEOPLE nt Equip Descr BARRA OFFIC BARRA	250 ment ip CKS EQ CKS EQ CKS EQ cks EQ	Ener Cons Valu 0.9 0.8 1.0	2.0 rgy Energoump Consume Units WATT- WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Miscel	HRAE2 HRAE2 S Equipmer Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens to Ret. Air Reheat Minimur	Radiant Option Fraction Air Pa
ard 28 com tumber 0 5 0 ard 29 com	Misc Equipmen Number 1 1 1 1 Very coordinates	DEOPLE The Equip Descr BARRA OFFIC BARRA OFFIC BARRA OFFIC CFM	ment cip ccks EQ ccks EQ ccks EQ ccks EQ ccks EQ	Ener Cons Valu 0.9 0.8 1.0	2.0 rgy Energy Sump Consulate WATT- WATT- WATT- WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Miscel	HRAE2 HRAE2 S Equipmer Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens to Ret. Air Reheat Minimur	Radiant Option Fraction Air Pa
coom fumber 0 5 0 5 10	Misc Equipment Number 1 1 1 Vector Cook Value 1710	PEOPLE nt Equip Descr BARRA OFFIC BARRA	250 ment rip acks EQ acts EQ	Ener Cons Valu 0.9 0.8 1.0	2.0 rgy Energoump Consume Units WATT- WATT- WATT-	WATT-SF ASI WATT-SF ASI Miscellaneous Miscel	HRAE2 HRAE2 S Equipmer Energy Meter Code NONE NONE NONE	Percent of Load Sensible	Percent Misc. Loa to Room	Percent d Misc. Sens to Ret. Air Reheat Minimur	Radiant Option Fraction Air Pa



Card 39- System Alternative

Number Description

1

EXISTING AIRSIDE EQUIPMENT

Card 40	Card 40 System Type												
OPTIONAL VENTILATION SYSTEM													
System		Ventil					Fan						
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static						
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure						
1	MZ												
2	MZ												
3 MZ													
4	M'7												

Card 41----- Zone Assignment System

	Ref #1		Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
ber	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	5										
2	10	10										
3	15	15										
4	20	20										

Card 42----- Fan SP and Duct Parameters-----System Cool Heat Return Mn Exh Aux Rm Exh Cool Return Supply Supply Return Set Fan Fan Fan Fan Fan Fan Fan Fan Mtr Fan Mtr Duct Duct Air Number SP SP SP SP SP SP Loc Loc Ht Gn Loc Path 2.5 2.5 3 2.5 2.5

Card 45				Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
2	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

------ Equipment Section Alternative #1 ------Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Schedule Schedule Max KW Alternative Description Schedule Drift EXISTING WATERSIDE EQUIPMENT Card 60----- Cooling Load Assignment-----Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End 2 2 2 2 3 3 3 4 Card 62----- Cooling Equipment Parameters -----Of --Capacity-- ---Energy----Code --Capacity-- ----Energy---- Order Seq Limit Units Value Units Value Units Value Units Value Units Num Type Number Name 1 ACC2 1 66.5 TONS 91.9 KW ACC2 1 66.5 TONS 91.9 KW EQ1008S 1 170 TONS 105 KW Card 63----- Cooling Pumps and References -----Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold Cooling Misc. Num Value Units Value Units Value Units Control Storage Tower Access. 1 3.7 KW 2 3.7 KW 11.2 KW · 11.2 KW 3 1 Card 65----- Heating Load Assignment Load All Coil Assignment Loads To Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Reference Heating Ref Begin End 1 1 1 1 2 2 2 2 3 4



Card 67	'				Неа	ting Equip	ment Par	cameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1	2.2	KW	381.8	MBH	525	MBH						
2	BOILERWT	1	2.2	KW	623.9	MBH	850	MBH						
3	BOILERWT	1	3.7	KW	2037	MBH	2750	MBH						

Card 69----- Fan Equipment Parameters -----System

Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						

em	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	11.2											

2 11.2 3 11.2 4 44.7

Card 71----- Base Utility Parameters -----Base Base Hourly Hourly Equip Demand Demand Demand Schedule Energy Utility Utility Reference Limiting Entering Leaving Number Descrip Value Units Code Type Number Number Temp Temp PIPE-PUMP LOSSES 1.92 TONS FTSAMCLG CHILL-LD 1 2 PIPE LOSSES 10.20 MBH FTSAMHTG HOT-LD 1 PIPE-PUMP LOSSES 1.92 TONS FTSAMCLG CHILL-LD 2 10.20 PIPE LOSSES 4 MBH FTSAMHTG HOT-LD 5 PIPE-PUMP LOSSES 7.0 TONS FTSAMCLG CHILL-LD 3 PIPE LOSSES 6 27.35 MBH FTSAMHTG HOT-LD 3

	Card	74			Condenser	/ Coolin	g Tower	Parameters				
		Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
4	Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
1		Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
	I	EQ5100			14.9	KW	T-WATER	CTOWER	1			



----- Load Section Alternative #2 -----

Card 19- Load Alternative -

Number

Description

_

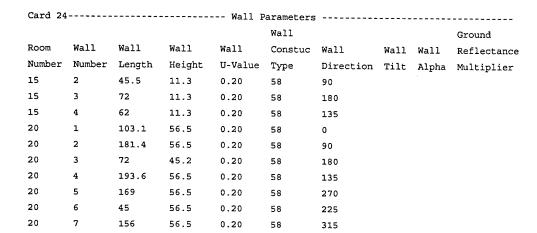
ECO D - INSTALL EMS

Card 20)			Genera	l Room	Paramete	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 590	145	145	8	1.5		10			
10	10	BLDG 591	145	145	8	1.5		10			
15	15	592 ADMIN	74	74	8	1.5		10			
20	20	592 BARRACKS	299.5	300	8	1.5		10			

	Card 21				Therm	ostat Param	eters				
		Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
	Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
1	ber	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
1		78	50	78		70	70				
	10	78	50	78		70	70				
	15	78	50	78		70	70				
	20	78	50	78		70	70				

Card 2	2			Roof Par	ameters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha
5	1	NO	87.5	88	0.14	37		68	
10	1	NO	87.5	88	0.14	37		68	
20	1	NO .	141.5	142	0.06	37			

Card 24				Wall F	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
5	1	583	10	0.24	58	350			
5	2	147.5	10	0.24	58	80			
5	3	583	10	0.24	58	170			
-	4	147.5	10	0.24	58	260			
	1	583	10	0.24	58	350			
10	2	147.5	10	0.24	58	80			
10	3	583	10	0.24	58	170			
10	4	147.5	10	0.24	58	260			
15	1	72	11.3	0.20	58	0			



Card 25	5				W	Mall/Glass Par	cameters				
				Pct Glass				Internal			Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
5	1	5	2.5	66	1.1	0.67					
5	2	5	2.5	6	1.1	0.67					
	3	5	2.5	75	1.1	0.67					
	4	5	2.5	75	1.1	0.67					
10	1	5	2.5	66	1.1	0.67					
10	2	5	2.5	6	1.1	0.67					
10	3	5	2.5	75	1.1	0.67					
10	4	5	2.5	75	1.1	0.67					
15	1	8	2.5	8	1.1	0.67					
15	3	8	2.5	8	1.1	0.67					
15	4			16.3	1.1	0.67					
20	1	5	2.5	32	1.1	0.67					
20	2	5	2.5	80	1.1	0.67					
20	3	5	2.5	32	1.1	0.67					
20	4	5	2.5	116	1.1	0.67	•				
20	5	5	2.5	80	1.1	0.67					
20	7	5 .	2.5	80	1.1	0.67					

Card 26				S	Schedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHBARRP	FSHBARRL				BARRSCHD				
10	FSHBARRP	FSHBARRL				BARRSCHD				
15	FSHOFFIC	FSHOFFIC				DAYSCHED				•
20	FSHBARRP	FSHBARRL				BARRSCHD				

01 Card - Job Information -----

Project: 03-0185.06 EEAP BOILER-CHILLER STUDY

Location: FT SAM HOUSTON, TEXAS

Client: CORPS OF ENGINEERS - FORT WORTH, TEXAS

Program User: HUITT-ZOLLARS, INC.

Comments: AREA 500, BLDGS. 590, 591, AND 592

Card 08-			Clim	atic Infor	mation			
	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
SANANTON								

----- Load Section Alternative #1 -----

Card 19- Load Alternative -

Number Description

EXISTING CONDITION

Card 20)			Genera	al Room	Paramete	rs				
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 590	145	145	8	1.5		10			
10	10	BLDG 591	145	145	8	1.5		10			
15	15	592 ADMIN	74	74	8	1.5		10			
20	20	592 BARRACKS	299.5	300	8	1.5		10			

Card 21	rd 21											
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet		
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On		
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor		
5	78	50	78		70	70						
10	78	50	78		70	70						
15	78	50	78		70	70						
20	78	50	78		70	70						

Card	22			Roof Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Numbe	r Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha
5	1	NO	87.5	88	0.14	37		68	
10	1	NO	87.5	88	0.14	37		68	
20	1	NO	141 5	140	0.00				

Card 24	ard 24 Wall Parameters									
					Wall				Ground	
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance	
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier	
5	1	583	10	0.24	58	350				
5	2	147.5	10	0.24	58	80				
5	3	583	10	0.24	58	170				
5	4	147.5	10	0.24	58	260				
10	1	583	10	0.24	58	350				
10	2	147.5	10	0.24	58	80				
10	3	583	10	0.24	58	170				
10	4	147.5	10	0.24	58	260				
15	1	72	11.3	0.20	58	0				
15	2	45.5	11.3	0.20	58	90				
15	3	72	11.3	0.20	58	180				
15	4	62	11.3	0.20	58	135				
20	1	103.1	56.5	0.20	58	0				
20	2	181.4	56.5	0.20	58	90				
20	3	72	45.2	0.20	58	180				
20	4	193.6	56.5	0.20	58	135				
20	5	169	56.5	0.20	58	270				
20	6	45	56.5	0.20	58	225				
20	7	156	56.5	0.20	58	315				

Card 25	Card 25 Wall/Glass Parameters										
				Pct Glass			External	Internal			Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
5	1	5	2.5	66	1.1	0.67					
5	2	5	2.5	6	1.1	0.67					
5	3	5	2.5	75	1.1	0.67					
5	4	5	2.5	75	1.1	0.67					
10	1	5	2.5	66	1.1	0.67					
10	2	5	2.5	6	1.1	0.67					
10	3	5	2.5	75	1.1	0.67					
10	4	5	2.5	75	1.1	0.67					
15	1	8	2.5	8	1.1	0.67					
15	3	8	2.5	8	1.1	0.67					
15	4			16.3	1.1	0.67					
20	1	5	2.5	32	1.1	0.67					
20	2	5	2.5	80	1.1	0.67					

20

12040

CFM

12040

CFM

				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading			Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	_	Туре		Transmittance	
20	3	5	2.5	32	1.1	0.67		-15-			
20	4	5	2.5	116	1.1	0.67					
20	5	5	2.5	80	1.1	0.67					
20	7	5	2.5	80	1.1	0.67					
Card 26	5					Schedules					
moos						Reheat	Cooling	Heating A	uxiliary	Room Daylig	hting
Jumber	People	Lights	Venti:	lation In	filtration	Minimum	Fans	Fan F	an	Exhaust Contro	ols
5	FSHBARR	P FSHBAF	RL			1					
10		P FSHBAF									
15		C FSHOFF									
20	FSHBARR	P FSHBAF	RL								
lard 27	7				People					Bud takan	
Room	People	People	People	People	Lighting		ghting			- Daylighting Terence Referen	
	Value	Units	-	Latent				ctor Ret.			
5	47	PEOPLE	250			_	HRAE2	.ccor .ccc.	AII 101	ine i Forne 2	•
10	47	PEOPLE	250				HRAE2				
15	13	PEOPLE	250				HRAE2				
20	307	PEOPLE	250	200	2.0		HRAE2				
Card 2	8					Miscellaneou	s Equipmen	ıt			
	Misc			Ener			Energy		Percent	Percent	
	Equipme	nt Equip	pment	Cons	ump Consu	mp Schedule		of Load		ad Misc. Sens	Radiant Optio
Room		Desci	rip	Valu	e Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction Air F
	Number				. שאידי	SF FSHBARRL	NONE				
Number	Number 1		ACKS EQ	0.9	MAII-	SI FOUDARRI	110111				
Room Number 5		BARRA	ACKS EQ ACKS EQ	0.9 0.9		SF FSHBARRI					
Number 5	1	BARRA BARRA			WATT-		NONE				
Number 5 10 15	1 1	BARRA BARRA OFFIC	ACKS EQ	0.9	WATT-	SF FSHBARRL	NONE				
Number 5 10	1 1 1	BARRA BARRA OFFIC	ACKS EQ CE EQ	0.9	WATT-	SF FSHBARRL	NONE				
Number 5 10 15 20	1 1 1	BARRA BARRA OFFIC BARRA	ACKS EQ CE EQ ACKS EQ	0.9 0.8 1.0	WATT- WATT-	SF FSHBARRI SF FSHOFFIC SF FSHBARRI	NONE NONE				
Number 5 10 15 20	1 1 1 1	BARRA BARRA OFFIC BARRA	ACKS EQ CE EQ ACKS EQ	0.9 0.8 1.0	WATT- WATT- WATT-	SF FSHBARRI SF FSHBARRI SF FSHBARRI	NONE NONE NONE				
Number 5 10 15 20 Card 29	1 1 1 1	BARRA BARRA OFFIC BARRA	ACKS EQ CE EQ ACKS EQ entilation	0.9	WATT-WATT-	SF FSHBARRI SF FSHBARRI SF FSHBARRI	NONE NONE NONE	ion			
Number 5 10 15 20 Card 29	1 1 1 1	BARRA BARRA OFFIC BARRA Ve	ACKS EQ CE EQ ACKS EQ entilation	0.9 0.8 1.0	WATT- WATT-	SF FSHBARRI SF FSHBARRI COOM Airflows	NONE NONE NONE -Infiltra	ion	g	Reheat Minimu	1m
Number 5 10 15 20 Card 29 Room	1 1 1 1 9Co	BARRA BARRA OFFIC BARRA 	ACKS EQ CE EQ ACKS EQ entilation ts Val	0.9 0.8 1.0	WATT- WATT	SF FSHBARRI SF FSHBARRI COOM Airflows	NONE NONE NONE -Infiltra	ion		Reheat Minimu	
Number 5 10 15 20 Card 29 Room Number 5	1 1 1 1 9	BARRI BARRI OFFIC BARRI OLING CFM	ACKS EQ CE EQ ACKS EQ entilation ts Val	0.9 0.8 1.0	WATT- WATT- WATT-	SF FSHBARRI SF FSHBARRI COOM Airflows	NONE NONE NONE -Infiltra	ion	g	Reheat Minimu	1m
Number 5 10 15 20 Card 29 Room	1 1 1 1 9Co	BARRA BARRA OFFIC BARRA 	ACKS EQ TE EQ ACKS EQ entilation ts Val 171	0.9 0.8 1.0	WATT- WATT	SF FSHBARRI SF FSHBARRI COOM Airflows	NONE NONE NONE -Infiltra	ion	g	Reheat Minimu	1m

------ System Section Alternative #1 ------

Card 39- System Alternative

Number

Description

1

EXISTING AIRSIDE EQUIPMENT

Card 40----- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----

System Ventil Fan
Set System Deck Cooling Heating Cooling Heating Static

Number Type Location SADBVh SADBVh Schedule Schedule Pressure

1 MZ

2 MZ

3 MZ

MZ

Card 41----- Zone Assignment

System

System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End										
1	5	5										
2	10	10										
3	15	15										
4	20	20										

Card 42----- Fan SP and Duct Parameters-----

SystemCoolHeatReturnMn ExhAuxRm ExhCoolReturnSupplySupplyReturnSetFanFanFanFanFan MtrFan MtrDuctDuctAirNumberSPSPSPSPLocLocHt GnLocPath

1 2.5

2 2.5

3 2.5

4 2.5

Card 45----- Equipment Schedules -----

System Main Direct Indirect Auxiliary Main Main Auxiliary Set Cooling Evap Evap Cooling Heating Preheat Reheat Mech. Heating Number Coil Economizer Coil Coil Coil Coil Coil Coil Humidity Coil 1 FTSAMCLG FTSAMHTG FTSAMHTG FTSAMCLG 2 FTSAMHTG FTSAMHTG FTSAMHTG FTSAMCLG 3 FTSAMHTG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG

------ Equipment Section Alternative #1 -----Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift EXISTING WATERSIDE EQUIPMENT Card 60----- Cooling Load Assignment----Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End 1 1 2 2 2 3 3 Card 62----- Cooling Equipment Parameters -----Cool Equip Num ------COOLING------ Seq Demand --Capacity-- ---Energy----Ref Code Of --Capacity-- ----Energy---- Order Seq Limit Num Name Units Value Units Value Units Value Units Value Units Num Type Number 1 ACC2 1 66.5 TONS 91.9 KW ACC2 1 66.5 TONS 91.9 KW EQ1008S 1 170 TONS 105 KW Card 63----- Cooling Pumps and References -----Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold Cooling Misc. Num Value Units Value Units Value Units Control Storage Tower Access. 1 3.7 KW 2 3.7 KW 3 11.2 KW 11.2 KW Card 65------ Heating Load Assignment Load All Coil Assignment Loads To Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Reference Heating Ref Begin End 1 1 2 3

Card 67					Неа	ting Equip	ment Par	ameters						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1	2.2	KW	381.8	MBH	525	MBH						
2	BOILERWT	1	2.2	KW	623.9	MBH	850	MBH						
3	BOILERWT	1	3.7	KW	2037	MBH	2750	MBH						

Card 69	Card 69 Fan Equipment Parameters											
System												
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional					
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation					
1	TYPFAN											
2	TYPFAN											
3	TYPFAN											
4	TYPFAN											

Card 70				Fan	Equip	Equipment KW Overrides						
		MAIN S	YSTEM-		OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	11.2											
2	11.2											
3	11.2											
4	44.7											

Card 71-	Card 71 Base Utility Parameters									
Base	Base	Hourly	Hourly			Equip	Demand			
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving	
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp	
1	PIPE-PUMP LOSSES	1.92	TONS	FTSAMCLG	CHILL-LD	1				
2	PIPE LOSSES	10.20	MBH	FTSAMHTG	HOT-LD	1				
3	PIPE-PUMP LOSSES	1.92	TONS	FTSAMCLG	CHILL-LD	2				
4	PIPE LOSSES	10.20	MBH	FTSAMHTG	HOT-LD	2				
5	PIPE-PUMP LOSSES	7.0	TONS	FTSAMCLG	CHILL-LD	3				
6	PIPE LOSSES	27.35	MBH	FTSAMHTG	HOT-LD	3				

Card 7	ard 74			- Condenser / Cooling Tower Parameters							
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Туре	Cells	Low Spd	Value	Units
1	EQ5100			14.9	KW	T-WATER	CTOWER	1			

----- Load Section Alternative #2 -----

Card 19- Load Alternative -

Number

Description

2

ECO D - INSTALL EMS

Card 20	rd 20 General Room Parameters													
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter			
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth			
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone				
5	5	BLDG 590	145	145	8	1.5		10						
10	10	BLDG 591	145	145	8	1.5		10						
15	15	592 ADMIN	74	74	8	1.5		10						
20	20	592 BARRACKS	299.5	300	8	1.5		10						

Card 21 Thermostat Parameters										
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70				
10	78	50	78		70	70				
15	78	50	78		70	70				
20	78	50	78		70	70				

Card 22	!			Roof Par	ameters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha
5	1	NO	87.5	88	0.14	37		68	
10	1	NO	87.5	88	0.14	37		68	
20	1	NO	141.5	142	0.06	37			

Card 24				ers					
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
5	1	583	10	0.24	58	350			
5	2	147.5	10	0.24	58	80			
5	3	583	10	0.24	58	170			
5	4	147.5	10	0.24	58	260			
10	1	583	10	0.24	58	350			
10	2	147.5	10	0.24	58	80			
10	3	583	10	0.24	58	170			
10	4	147.5	10	0.24	58	260			
15	1	72	11.3	0.20	58	0			

Card 24 Wall Para										
						Wall				Ground
	Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
	Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
	15	2	45.5	11.3	0.20	58	90			
	15	3	72	11.3	0.20	58	180			
	15	4	62	11.3	0.20	58	135			
	20	1	103.1	56.5	0.20	58	0			
	20	2	181.4	56.5	0.20	58	90			
	20	3	72	45.2	0.20	58	180			
	20	4	193.6	56.5	0.20	58	135			
	20	5	169	56.5	0.20	58	270			
	20	6	45	56.5	0.20	58	225			
	20	7	156	56.5	0.20	58	315			

Card 25					W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Type	Ret. Air	Transmittance	Reflectance
5	1	5	2.5	66	1.1	0.67					
5	2	5	2.5	6	1.1	0.67					
5	3	5	2.5	75	1.1	0.67					
5	4	5	2.5	75	1.1	0.67					
10	1	5	2.5	66	1.1	0.67					
10	2	5	2.5	6	1.1	0.67					
10	3	5	2.5	75	1.1	0.67					
10	4	5	2.5	75	1.1	0.67					
15	1	8	2.5	8	1.1	0.67					
15	3	8	2.5	8	1.1	0.67					
15	4			16.3	1.1	0.67					
20	1	5	2.5	32	1.1	0.67					
20	2	5	2.5	80	1.1	0.67					
20	3	5	2.5	32	1.1	0.67					
20	4	5	2.5	116	1.1	0.67					
20	5	5	2.5	80	1.1	0.67					
20	7	5	2.5	80	1.1	0.67					

Card 26	rd 26 Schedules											
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting		
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls		
5	FSHBARRP	FSHBARRL				BARRSCHD						
10	FSHBARRP	FSHBARRL				BARRSCHD						
15	FSHOFFIC	FSHOFFIC				DAYSCHED						
20	FSHBARRP	FSHBARRL				BARRSCHD						

Card 59		E	quipment	Descripti	on / TOD s	Schedule	s				
	-	Elec Demand							Der	nand Limit	
Alternative Ti	_	_								Tempera	
	chedule	Schedule	Max KW		ive Descr				Schedule	e Drif	t
3				ECO E1 -	WATER CO	OLED CEN	TRIFUGAL				
Card 60				Cooli	ng Load A	ssignmen	t				
Load All Coil	-										
											oup 8Group 9-
Ref Cool Ref	Sizing	Begin End	Begin End	Begin E	nd Begin	End Be	gin End	Begin Er	ıd Begiı	n End Beg	in End Begin End
1 1		1 4									
Card 62			Ca	alina Eau	immanh Da						
Card 62 Cool Equip		C001									
Ref Code		pacity		ergy		acity		-Energy		Seq Order Se	Demand eq Limit
Num Name	Units Valu	-	Value	Units	-	Units		ue Uni			pe Number
1 EQ1008L	1 300	TONS	171	KW							L
Card 63											
CoolCHILLEI Ref Full Load								1-1-1	77	Mi	
Num Value	Units	Value	Units	Value	Units			Cold (Storage 1	Cooling	Access.	
1 18.6	KW	14.9	KW	Value	OHICS	CO	ncror a	-	rower	Access.	
								-	-		
Card 71			Pago	Heilies r							
Card 71Base Base		Hourly	Hourly	ocility F	rarameters	Equip		nand			
Utility Utili	tv	Demand	-	Schedule	Energy			mand miting Er	nterina	Leaving	
Number Descr	-	Value		Code	Туре	Number			gme	Temp	
1 DISTR	IBUTION LOS	11.0	TONS	FTSAMCLG	CHILL-LD	1			-	•	
Card 74					•						
Cooling				Energy				Percent			od
Tower Tower		Capacity	_	Consump		Tower	Of	Airflow			<i>'</i>
Ref Code 1 EQ5100	Value		Value	Units	Туре	Туре	Cells	Low Spd	Value	Units	
1 EQ5100			11.2	KW	T-WATER	CTOWER	1				
**	Eau:	ipment Section	on Altern	native #4							
	- 4										
Card 59			Equipment	Descripti	ion / TOD	Schedule	s				
E	lec Consump	Elec Deman	d Demand						De	mand Limit	
Alternative T	-	Time of Da	=							Tempera	ature
Number S	chedule	Schedule	Max KW	Alternat	tive Descr	iption			Schedul	e Dri	Et

	60				Cooling	Load Assignme	nt				
Load	All Coil					2044 120231					
			ent -Group 1-	-Group 2-	-Group 3-	-Group 4-	Group 5-	-Group 6-	-Group 7-	-Group	- Croup a
Ref	Cool Ref					Begin End H				_	_
1	1		1 4	5		2032 2		Degin Dia	begin bila	begin b	id begin bil
Card	62		••••	Coo	oling Equipm	nent Paramete	:s				
Cool	Equip	Num -	CC	OOLING		HE	T RECOVERY	?	Seq	1	Demand
Ref	Code	Of -	Capacity-~	Ene	rgy	Capacity-		Energy	Order	Seq 1	Limit
Num	Name	Units V	/alue Units	Value	Units	Value Units	. Valu	e Units	Num	Type i	Number
1	EQ1009	1 3	300 TONS	171	KW						
Cool	CHILLE	D WATER	oad Full Load	ENSER	HT REC	or AUX	Switch-		ling Misc.		
Num	Value	Units	Value	Units	Value	Units (Control St	orage Tow	er Access	s.	
1	18.6	KM	14.9	KW				1			
Base	Base ty Utili r Descr	ty	Hourly Demand Value LOS 11.0	Hourly Demand S Units G	Schedule Er	Equipmergy Refer	Dema	and Iting Ente	ring Leavi		

1 EQ5100

----- Equipment Section Alternative #1 ------Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift ECO E3 - WATER COOLED SCREW Card 60----- Cooling Load Assignment----Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End Begin Card 62----- Cooling Equipment Parameters Of --Capacity------Energy---- --Capacity-- ----Energy---- Order Seq Limit Ref Code Num Name Units Value Units Value Units Value Units Value Units Num Type Number 1 YSCRW22 1 300 TONS 186 KW Card 63------ Cooling Pumps and References Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold Cooling Misc. Num Value Units Value Units Value Units Control Storage Tower Access. 1 18.6 KW 14.9 KW Card 71----- Base Utility Parameters ------Base Base Hourly Hourly Equip Demand Utility Utility . Demand Demand Schedule Energy Reference Limiting Entering Leaving
Number Descrip Value Units Code Type Number Number Temp Temp Number Descrip Value Units Code Type Number Number Temp Temp DISTRIBUTION LOS 11.0 TONS FTSAMCLG CHILL-LD 1 Card 74----- Condenser / Cooling Tower Parameters -----Cooling Energy Energy Number Percent Low Spd Low Spd Tower Tower Capacity Capacity Consump Consump Fluid Tower Of Airflow Energy Energy Ref Code Value Units Value Units Type Type Cells Low Spd Value Units

11.2 KW T-WATER CTOWER 1

Card 27	ard 27													
							Lighting		Percent	Daylig	hting			
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference			
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2			
5	47	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2							
10	47	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2							
15	13	PEOPLE	250	200	2.2	WATT-SF	ASHRAE2							
20	307	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2							

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	BARRACKS EQ	0.9	WATT-SF	FSHBARRL	NONE					
10	1	BARRACKS EQ	0.9	WATT-SF	FSHBARRL	NONE					
15	1	OFFICE EQ	0.8	WATT-SF	FSHOFFIC	NONE					
20	1	BARRACKS EQ	1.0	WATT-SF	FSHBARRL	NONE					

Card 29	9				Room Airflows						
		Venti	lation			Infil	tration				
Room	Cool	ling	Heat	ing	Coo	Cooling		ting	Reheat Minimum		
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	
5	1710	CFM	1710	CFM							
10	1710	CFM	1710	CFM							
15	20	CFM-P	20	CFM-P							
20	12040	CFM	12040	CFM							

------ System Section Alternative #2 ------

Card 39- System Alternative

Number Description
2 ECO D - INSTALL EMS AIRSIDE EQ

Card 40 System Type															
			OPTIONAL VENTILATION SYSTEM												
	System		Ventil					Fan							
	Set	System	Deck	Cooling	Heating	Cooling	Heating	Static							
	Number	Туре	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure							
	1	MZ													
	2	MZ													
	3	MZ													
	4	MZ													

System														
Set		Ref #1		Ref #2			Ref #3		Ref #4		Ref	Ref #5		# 6
umber	Ве	gin	End	Begin	End	В	egin 1	End	Begin	End	Begin	End	Begin	End
	5		5											
	10)	10											
3	15	5	15											
1	20)	20											
			Return			Rm Exh					oly Return			
Set		Fan				Fan		Fan Mtr		Duct				
Number		SP	SP	SP	SP :	SP	Loc	Loc	Ht Gr	Loc	Path			
1 2	2.5													
3	2.5													
4	2.5													
_	Econ	On	on Max I	ide Evap				-						overy
Set Number	Type		nt Air	_	ing C	vap	Evap	Fan						Exh-Side Deck
1	DRY-BUI		100	0001	ing c	COLING	Coolin	g Cycl	ing St	age I	Stage Z	Stage 1	Stage	2 Stage 1 Stage
2	DRY-BUI		100											
3	DRY-BUI		100											
4	DRY-BUI		100											
Card 49	5					Equ	ipment S	chedules						-
System	Main			Direct	: In	direct	Auxilia	ry Main	Ma	in			Auxiliar	У
Set	Cooli	-		Evap	Ev	ap	Cooling	Heati	ng Pi	reheat	Reheat	Mech.	Heating	
	Coil		Conomizer	c Coil	Co	il	Coil	Coil		oil	Coil	Humidity	Coil	
1			TSAMCLG								FTSAMHTG			
2			FTSAMCLG								FTSAMHTG			
3 4			FTSAMCLG					FTSAM		SAMHTG				
i.	FISAM	ا قاتلات	FTSAMCLG					f"TSAM	HTG F	rsamhtg	FTSAMHTG			
Card 4	6				EMS	/BAS So	chedules							
System	Discr	im I	Night	Optimum	Opti	mum -	D	UTY CYCLI	NG	S	ystem HR F	oom HR		
Set	Contr		Purge	Start	Stop		On Period	Patterr	n Maxim	num E	xhaust E	xhaust		
Number	Sched	ule s	Schedule	Schedule	s Sche	dule S	Schedule	Length	Off 7	Time S	chedule S	chedule		
1				OPSTRTB	OPST	PB								
2				OPSTRTB	OPST									
3				OPSTART	OPST									
4				OPSTRTB	OPST	PB								

----- Equipment Section Alternative #2 -----Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift ECO D - INSTALL EMS WATERSIDE EQ Card 60----- Cooling Load Assignment-----Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End 1 2 2 2 2 Card 62----- Cooling Equipment Parameters Cool Equip Num ------COOLING------ Seq Ref Code Of --Capacity-- ---Energy------Capacity-- ---Energy----Order Seq Limit --Capacity-- ----Energy---- Order Seq Limit Value Units Value Units Num Type Number Units Value Units Num Name Value Units 66.5 TONS 91.9 1 ACC2 1 KW 2 ACC2 66.5 TONS 91.9 KW 170 TONS 3 EQ1008S 1 105 KW Card 63----- Cooling Pumps and References Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold Cooling Misc. Num Value Units Value Units Value Units Control Storage Tower Access. 1 3.7 KW 2 3.7 KW 11.2 KW 11.2 KW Card 64------ Cooling Equipment Options -----Free Cond Cond Cond Rej Cond Rej Cool Max Load Ref CW Shed Evap Cooling Heat Entering Min Oper To Ref @ HW

Num Reset Economizer Precool Type Source Temp Temp Type Number Temp

85

85

85

55

55

55

10

2 10

3 10

27.35 MBH

PIPE LOSSES

	All	Coil														
Assignme	ent Loa	ds To	-Group	1-	-Group 2-	-Gro	up 3-	-Group 4	Grou	p 5-	-Group	6Grou	p 7-	-Group	8Gr	oup 9-
Referenc	ce Hea	ting Ref	Begin	End	Begin End	l Begi	n End	Begin En	d Begin	End	Begin E	nd Begin	End	Begin H	End Beg	in End
1	1		1	1												
2	2		2	2												
3	3		3	4												
Card 67						Hea	ting E	Equipment	Paramete	rs						
Heat	Equip	Number	HW Pr	πp				Ener	ay.		Seq	Switch				Demar
Ref	Code	Of	Full	Ld		Cap'y		Rate	:		Order	over	Hot	Misc.		Limi
Number	Name	Units	Value	e t	Inits	Value	Units	yalu	e Unit	s	Number	Control	Strg	Acc.	Cogen	Numb
1	BOILERW	T 1	2.2	K	CM	381.8	MBH	525	MBH							
2	BOILERW	T 1	2.2	F	CW	623.9	MBH	850	MBH							
3	BOILERW	т 1	3.7	F	CM	2037	MBH	2750	MBH							
Card 69			I	Fan Ec	quipment I	Paramet	ers									
System				•	-											
Set	Cool	ing Hea	ting	Retur	n Exha	ust	Auxili	iary Room	n Op	tiona	1					
Number	Fan	Fan		Fan	Fan		Supply	y Exha	_	ntila						
1	TYPF	'AN														
2	TYPF	'AN														
3	TYPF	'AN														
4	TYPE															
•	1122	'AN														
•	1177	'AN														
-	1175	AN														
Card 70	MF	IN SYSTEM		07	THER SYST	EM		MAND LIMIT	PRIORIT	Y						
Card 70 System	MF Cool F	 IN SYSTEM	Exh	01 Aux	THER SYSTI	EM Opt	DE	MAND LIMIT	PRIORIT	Y Opt						
Card 70 System Set	MF	IN SYSTEM (eat Ret 'an Fan	Exh Fan	OT Aux Sup	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number	Cool F	 IN SYSTEM	Exh	01 Aux	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number 1	Cool F Fan F KW F	IN SYSTEM (eat Ret 'an Fan	Exh Fan	OT Aux Sup	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number 1 2	MF Cool F Fan F KW F 11.2	IN SYSTEM (eat Ret 'an Fan	Exh Fan	OT Aux Sup	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number 1 2 3	MF Cool F Fan F KW F 11.2 11.2	IN SYSTEM (eat Ret 'an Fan	Exh Fan	OT Aux Sup	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number 1 2	MF Cool F Fan F KW F 11.2	IN SYSTEM (eat Ret 'an Fan	Exh Fan	OT Aux Sup	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number 1 2 3	MF Cool F Fan F KW F 11.2 11.2	IN SYSTEM (eat Ret 'an Fan	Exh Fan	OT Aux Sup	THER SYSTI ROOM (Exh	EM Opt Vent (DEN	MAND LIMIT	PRIORIT Room Exh	Y Opt Vent						
Card 70 System Set Number 1 2 3 4	Cool F Fan F KW F 11.2 11.2 11.2 44.7	AIN SYSTEM Meat Ret Pan Fan W KW	Exh Fan KW	OT Aux Sup KW	Room (Exh ' KW 1	EM Opt Jent (DEN	MAND LIMI' Heat Aux Fan Fan	PRIORIT ROOM Exh Fan	Y Opt Vent Fan						
Card 70 System Set Number 1 2 3 4 Card 71	MF Cool F Fan F KW F 11.2 11.2 11.2 44.7	IN SYSTEM (eat Ret 'an Fan	Exh Fan KW	OT Aux Sup KW	Room (Exh (KW)	EM Opt Vent (KW I	DEN	MAND LIMI' Heat Aux Fan Fan	PRIORIT ROOM Exh Fan	Y Opt Vent Fan						
Card 70 System Set Number 1 2 3 4 Card 71 Base	MF Cool F Fan F KW F 11.2 11.2 44.7	AIN SYSTEM leat Ret 'an Fan KW KW	Exh Fan KW	OT Aux Sup KW	Room (Exh (KW)	EM Dpt /ent (KW I se Uti:	Cool I	MAND LIMIT Heat Aux Fan Fan	PRIORITI ROOM Exh Fan Equip	Y Opt Vent Fan	Demand					
Card 70 System Set Number 1 2 3 4 Card 71 Base Utility	Cool F Fan F KW F 11.2 11.2 44.7	IN SYSTEM leat Ret lan Fan KW KW	Exh Fan KW	OT Aux Sup KW	Room (Exh (KW) Hourly Demand	eM Dpt /ent (KW I se Util / d Scho	Cool IFan I	MAND LIMITHEAT AUX Fan Fan arameters	PRIORITI ROOM Exh Fan Equip Referer	Opt Vent Fan	Demand Limiting	Entering	, Lea	_		
Card 70 System Set Number 1 2 3 4 Card 71 Base Utility	Cool FFan FKW F11.2 11.2 11.2 44.7 Base	AIN SYSTEM leat Ret lean Fan KW KW	Exh Fan KW H D	OT Aux Sup KW	Room (Exh (Exh (KW) Hourl: Deman.	Se Uti: Y Code Code	Cool I	MAND LIMITHEAT AUX Fan Fan arameters Energy Type	PRIORITI ROOM Exh Fan Equip Referer Number	Opt Vent Fan	Demand			_		
Card 70 System Set Number 1 2 3 4 Card 71 Base Utility Number 1	Cool FFan FKW F11.2 11.2 11.2 44.7 Base Utilit Descri	AIN SYSTEM leat Ret lean Fan KW KW	Exh Fan KW He Do V:	OT Aux Sup KW	Room (Exh (Exh (KW) Hourl: Deman. Units	Se Uti: Y d Scho Code	Cool I Fan 1 Lity Pa	MAND LIMITHEAT AUX Fan Fan arameters Energy Type CHILL-LD	Equip Referer Number	Opt Vent Fan	Demand Limiting	Entering	, Lea	_		
Card 70 System Set Number 1 2 3 4 Card 71 Base Utility Number 1	Cool FFan FKW F11.2 11.2 11.2 44.7 Base Utilit Descri	AIN SYSTEM leat Ret can Fan KW KW EY POUMP LOSSE	Exh Fan KW	O'. Aux Sup KW ourly emand alue .92	Room (Exh (Exh (KW) Hourly Demandunits TONS MBH	Se Util Y d Scho Code FTS:	Cool I Fan I Lity Pa edule E AMCLG	MAND LIMIT Heat Aux Fan Fan arameters Energy Type CHILL-LD HOT-LD	Equip Referer Number	Opt Vent Fan	Demand Limiting	Entering	, Lea	_		
Card 70 System Set Number 1 2 3 4 Card 71 Base Utility Number 1 2 3	Cool F Fan F KW F 11.2 11.2 11.2 44.7 Base Utilit Descri	LIN SYSTEM LEAT RET LEAN FAN LEAN KW LEAN KW LEAN FAN LEA	Exh Fan KW	O' Aux Sup KW	Room (Exh (Exh (KW) Hourly Demandunits TONS MBH TONS	Se Util Y d Scho FTS FTS	Cool I Fan I lity Pa	AND LIMITHEAT AUX FAN FAN FAN FAN Energy Type CHILL-LD HOT-LD CHILL-LD	Equip Referer Number	Opt Vent Fan	Demand Limiting	Entering	, Lea	_		
Card 70 System Set Number 1 2 3 4 Card 71 Base Utility Number 1	Cool F Fan F KW F 11.2 11.2 11.2 44.7 Base Utilit Descri PIPE-I PIPE I	AIN SYSTEM leat Ret can Fan KW KW EY POUMP LOSSE	Exh Fan KW	O'. Aux Sup KW ourly emand alue .92	Room (Exh (Exh (KW) Hourly Demandunits TONS MBH	Se Util Y d Scho FTS: FTS: FTS:	Cool I Fan I lity Pa edule AMCLG AMCLG AMMTG	MAND LIMIT Heat Aux Fan Fan arameters Energy Type CHILL-LD HOT-LD	Equip Referer Number	Opt Vent Fan	Demand Limiting	Entering	, Lea	_		

FTSAMHTG HOT-LD 3

----- Equipment Section Alternative #2 -----Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand Alternative Time of Day Time of Day Limit Temperature Schedule Schedule Max KW Alternative Description Number Schedule Drift ECO F - REPLACE BLRS WITH CENTRAL BLRS Card 65----- Heating Load Assignment All Coil Assignment Loads To -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Reference Heating Ref Begin End Begi 1 1 4 Card 67----- Heating Equipment Parameters Heat Equip Number HW Pmp Seq Switch Energy Ref Code Of Order over Hot Misc. Full Ld Cap'y Rate Number Name Units Value Units Value Units Value Units Number Control Strg Acc. Cogen Number 2000 MBH BOILHEFT 1 7.5 KW 1830 MBH Card 71----- Base Utility Parameters -----Hourly Hourly Base Base Equip Demand Demand Schedule Energy Utility Utility Reference Limiting Entering Leaving Number Descrip Units Code Type Value Number Number Temp DISTRIBUTION LOS 48.0 MBH

FTSAMHTG HOT-LD

Utility Description Reference Table

Schedules:

BARRSCHD COOLING FAN SCHEDULE CODE FOR BARACKS

DAYSCHED COOLING FAN SCHEDULE CODE

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

OPSTART OPTIMUM START COOLING FAN SCHED. CODE

OPSTOP OPTIMUM STOP COOLING FAN SCHED. CODE

OPSTPB OPTIMUM STOP COOLING FAN SCHED. CODE

OPSTRTB OPTIMUM START COOLING FAN SCHED. CODE

System:

MZ MULTIZONE SYSTEM

Equipment:

Cooling:

ACC2 TYPICAL AIR COOLED RECIP CHILLER

EQ1008L 3-STG CENTRIFUGAL > 300 TONS

EQ1008S 3-STG CENTRIFUGAL < 300 TONS

EQ1009 3-STG CTV WITH VARIABLE FREQUENCY DRV

Heating:

BOILERWT WATERTUBE BOILER

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

Schedule Name: BARRSCHD

Project: COOLING FAN SCHEDULE CODE FOR B

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent ----

0

100

8 0 100 17

24

Schedule Name: DAYSCHED

Project: COOLING FAN SCHEDULE CODE

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent 0 0 6 100 17 0 24

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
12	100
16	0
24	

Schedule Name: FSHBARRL

Project: F.S.H. BARRACKS LIGHT\MISC. SCH Location: F.S.H. - SAN ANTONIO TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: LIGHT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 5 17 80 22 5 24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 5

8 50

22 5

24

Schedule Name: FSHBARRP

Project: F.S.H. BARRACKS PEOPLE SCHEDULE

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: PEOPLE SCHEDULE FOR BARRACKS

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 100

8 0

17 80

22 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 50

24

Schedule Name: FSHOFFIC

Project: F.S.H. OFFICE INTERNAL LOAD SCH Location: F.S.H. SAN ANTONIO, TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC. - JTC, Comments: ALL INTERNAL LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- 0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent
--- 0 0
24

Schedule Name: FTSAMCLG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH, Program User: HUITT-ZOLLARS, INC.

Comments: CHILLER SCHEDULE

Starting Month: JAN Ending Month: APR
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: MAY Ending Month: OCT
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent
---- 0 100
24

Starting Month: NOV Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Schedule Name: FTSAMHTG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH,

Program User: HUITT-ZOLLARS, INC.

Comments: BOIELR SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

0 100

24

Starting Month: MAY Ending Month: OCT
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: NOV Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

24

Schedule Name: OPSTART

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	qO	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

. Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
---- 0 0
24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
6	100
7	0
24	

Schedule Name: OPSTOP

Project: OPTIMUM STOP COOLING FAN SCHED.

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Οp	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- 0 0
24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

0 0

16 100 17 0

17 24 Schedule Name: OPSTPB

Project: OPTIMUM STOP COOLING FAN SCHED.

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DET AMOUNT OF TIME FAN OF IN B

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Туре	Op	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
---0 0
24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent
0 0
7 100
8 0

Schedule Name: OPSTRTB

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DET AMOUNT OF TIME FOR FAN ON

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Op	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 0

24

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

0 0

16 100

17 0

Utility Description Reference Table

Schedules:

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

System:

MZ MULTIZONE SYSTEM

Equipment:

Cooling:

YSCRW22 YORK W.C. SCREW CHILLER

Heating:

BOILHEFT HIGH EFFICIENCY MODULAR FIRETUBE BOIL.

Tower:

EQ5100 COOLING TOWER FANS

EEAP BOILER

FT SAM HOUSTON, TEXAS

CORPS OF ENGINEERS - FORT WORTH, TEXAS
HUITT-ZOLLARS, INC.

AREA 500, BLDGS. 590, 591, AND 592

Weather File Code:

Location:	SAN AN	TONIO, TEXA
Latitude:	29.0	(deg)
Longitude:	98.0	(deg)
Time Zone:	6	
Elevation:	792	(ft)
Barometric Pressure:	29.0	(in. Hg)
Summer Clearness Number:	0.90	
Winter Clearness Number:	0.90	

0.90
97 (F)
76 (F)
30 (F)
0.20
0.20

Air Density:	0.0738	(Lbm/cuft)
Air Specific Heat:	0.2444	(Btu/lbm/F)

Density-Specific Heat Prod:	1.0818	(Btu-min./hr/cuft/F)
Latent Heat Factor:	4,761.9	(Btu-min./hr/cuft)
Enthalpy Factor:	4.4255	(Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 15:33: 4 2/17/96
Dataset Name: FSH500 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1
EXISTING AIRSIDE EQUIPMENT

System Totals

Percent	Cool	ing Loa	d	Heati	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	15.7	9	412	-97,421	58	493	8,073.0	0	0	0.0	0	0
5 - 10	31.3	4	165	-194,842	22	189	16,146.0	0	0	0.0	0	0
10 - 15	47.0	5	227	-292,263	12	97	24,218.9	0	0	0.0	0	0
15 - 20	62.7	8	369	-389,684	8	64	32,291.9	0	0	0.0	0	0
20 - 25	78.3	10	439	-487,105	0	0	40,364.9	0	0	0.0	0	0
25 - 30	94.0	10	428	-584,526	0	0	48,437.9	0	0	0.0	0	0
30 - 35	109.7	9	388	-681,948	0	0	56,510.9	0	0	0.0	0	0
35 - 40	125.3	9	400	-779,369	0	0	64,583.8	0	0	0.0	0	0
40 - 45	141.0	6	269	-876,790	0	0	72,656.8	0	0	0.0	0	0
45 - 50	156.7	4	197	-974,211	0	0	80,729.8	0	0	0.0	0	0
50 - 55	172.3	7	321	-1,071,632	0	0	88,802.8	0	0	0.0	0	0
55 - 60	188.0	6	287	-1,169,053	0	0	96,875.8	0	0	0.0	0	0
60 - 65	203.7	3	148	-1,266,474	0	0	104,948.8	0	0	0.0	0	0
65 - 70	219.3	6	258	-1,363,895	0	0	113,021.7	0	0	0.0	0	0
70 - 75	235.0	1	65	-1,461,316	0	0	121,094.7	0	0	0.0	0	0
75 - 80	250.7	1	43	-1,558,737	0	0	129,167.7	0	0	0.0	0	0
80 - 85	266.3	0	0	-1,656,159	0	0	137,240.7	0	0	0.0	0	0
85 - 90	282.0	0	0	-1,753,580	0	0	145,313.7	0	0	0.0	0	0
90 - 95	297.7	0	0	-1,851,001	0	0	153,386.7	0	0	0.0	0	0
95 - 100	313.3	0	0	-1,948,422	0	0	161,459.6	100	8,760	0.0	0	0
Hours Off	0.0	0	4,344	0	0	7,917	0.0	0	0	0.0	0	8,760

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 EXISTING WATERSIDE EQUIPMENT

ef	Fouir					Ma	blu Car							
	Equip Code	Jan	Feb	Mar	Apr	Moni May	June	sumption July	Aug	Sep	Oct	Nov	Dec	
4111	code	oan	165	PIGIT.	Apı	Hay	oune	buly	Aug	sep	OCL	NOV	Dec	Tota
0	LIGHTS													
	ELEC	41731	37678	40796	40536	41264	39600	42199	40796	40536	41263	40536	42199	489,1
	PK	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
2	MISC LD													
-	GAS	0	0	0	0	0	0	0	0	0	0		0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
3	MISC LD													
J	OIL	0	0	0	0	0	0	0	•	•	_		_	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0.0	c
	MISC LD													
4	P STEAM	0	0	0			•	•		•	_		_	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
5	MISC LD													
-	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ı
1			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	1428	1382	1428	1428	1382	1428	0	0	8,4
	PK	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.0	:
2			BAS	E UTILIT	Y									
	HOTLD	76	69	76	73	0	0	0	0	0	0	73	76	
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
3			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	1428	1382	1428	1428	1382	1428	0	0	8,
	PK	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.0	
4			BAS	E UTILIT	Y									
	HOTLD	76	69	76	73	0	0	0	0	0	0	73	76	
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 EXISTING WATERSIDE EQUIPMENT

				E Q	UIPI	MENT	ENE	RGY (CONS	UMPTI	ON			
Ref	Equip -					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5		BASE UTILITY												
	CHILLD	0	0	0	0	5208	5040	5208	5208	5040	5208	0	0	30,912
	PK	0.0	0.0	0.0	0.0	7.0	7.0	7.0	7.0	7.0	7.0	0.0	0.0	7.0
6			BASE	UTILITY										
	HOTLD	203	184	203	197	0	0	0	0	. 0	0	197	203	1,188
	PK	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3
1	ACC2		TYPI	CAL AIR	COOLED	RECIP CH	TLLER	В	ldg. 590 CI	HW Equip	nent			
_	ELEC	0	0	0	0	21167	25907	31358	31312	24035	10473	0	0	144,252
	PK	0.0	0.0	0.0	0.0	73.2	73.1	78.5	78.2	69.6	55.0	0.0	0.0	78.5
1	EQ5001		CHIL	LED WATE	סאווס ק	- СОМОТ	ANT VOLU	ME						-
-	ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
														
1	EQ5300	CONTROL PANEL & INTERLOCKS												
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	ACC2		דסעיד	CAL AIR	COOLED	DECTO CH	TI.I.PD	В	ldg. 591 C	HW Equip	ment			
-	ELEC	0	0	0	0	21167	25907	31358	31312	24035	10473	0	0	144,252
	PK	0.0	0.0	0.0	0.0	73.2	73.1	78.5	78.2	69.6	55.0	0.0	0.0	78.5
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
3	EQ1008S		3_07	G CENTRI	PUCAT.	200 TOM		Bl	dg. 592 CI	IW Equipn	nent			
_	ELEC	.0	0	0	0	35931	34392	41775	42986	33567	13473	0	0	202,124
	PK	0.0	0.0	0.0	0.0	99.6	101.1	104.1	105.4	102.5	72.0	0.0	0.0	105.4
3	EQ5100		COOT	ING TOWE	D FAMO									
,	ELEC	0	0	ING TOWE	0	11086	10728	11086	11086	10728	5337	0	o	60,050
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
3	EQ5100		COOT	ING TOWE	P FANC									
~	WATER	0	0	0	0	237	225	272	277	217	85	0	0	1,314
	PK	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.5	0.0	0.0	0.6
					-									2.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1
EXISTING WATERSIDE EQUIPMENT

				E (UIPI	MENT	ENEF	RGY (CONS	JMPTI	O N			
Ref	Equip					Mont	hly Cons	numption						
Num		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5001		CHII	LLED WATE	ER PUMP	- CONST	ANT VOLUM	ME						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	49,459
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
3	EQ5010		CONI	DENSER WA	ATER PUM	P-CV(HIG	H EFFIC.)	ı						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	49,459
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
,	FOERO		CONT	0005 DAN	77 6 TAM			·				-		
3	EQ5300 ELEC	•		rol pani								_		
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	720 1.0	1.0	0.0	0	4,416
	***	0.0	0.0	0.0	0.0	<u> </u>			1.0	1.0	1.0		0.0	1.0
1	TYPFAN		GENI	ERIC FAN		Blag. 590	Airside Fa	ins						
	ELEC	8333	7526	8333	8064	9333	8064	8333	8333	8064	8333	8064	8333	98,112
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
2	TYPFAN		GEN	ERIC FAN		Bldg. 591	Airside Fa	ans						
	ELEC	8333	7526	8333	8064	8333	8064	8333	8333	8064	8333	8064	8333	98,112
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
3	TYPFAN		GEN	ERIC FAN		Bldg. 592	Airside Fa	ans						
	ELEC	8333	7526	8333	8064	8333	8064	8333	8333	8064	8333	8064	8333	98,112
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
4	TYPFAN		GENI	ERIC FAN										
-	ELEC	33257	30038	33257	32184	33257	32184	33257	33257	32184	33257	32184	33257	301 573
١	PK	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	391,572
1		1	WAT	ERTUBE BO	OTLER	Bldg. 590	HW Equi	oment	*					
	GAS	280	237	104	101	0	0	0	0	0	0	101	148	972
	PK	0.8	0.8	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.8
1	EQ5020		HEA'	ring wat	ER CIRCU	LATION P	UMP						,	
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,557
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
1	EQ5311		BOI	LER CONT	ROLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
_						Bldg. 59	1 HW Equ	ipment						
2				ERTUBE B										
	GAS	278	235	103	100	0	0	0	0	0	0	100	145	962
	PK	0.8	0.8	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.8

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EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 EXISTING WATERSIDE EQUIPMENT

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ------ Monthly Consumption ------Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Total 2 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 1258 1100 818 792 0 0 0 0 0 0 792 5,676 PK 2.2 2.2 2.2 2.2 2.2 0.0 0.0 0.0 0.0 0.0 2.2 0.0 2.2 2 EQ5311 BOILER CONTROLS 0 ELEC 72 63 47 45 0 0 0 0 0 322 7 0.0 0.1 PΚ 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1 0.1 Bldg. 592 HW Equipment WATERTUBE BOILER 641 456 275 GAS 266 0 0 0 0 0 0 266 282 2,185 PK 4.1 4.0 0.7 0.7 0.0 0.0 0.0 0.0 0.0 4.1 0.0 0.7 1.3 3 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 1761 1413 1376 1332 0 0 0 0 0 0 1332 1387 8,603 PK 3.7 3.7 3.7 3.7 0.0 0.0 0.0 0.0 0.0 0.0 3.7 3.7 3.7 BOILER CONTROLS 3 EQ5311 ELEC 59 48 47 45 0 0 0 0 0 0 291 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 2 ECO D - INSTALL EMS AIRSIDE EQ

System Totals

Percent	Cool	ing Loa	d	Heati	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	15.7	42	1,655	-126,784	69	428	8,073.0	40	3,402	0.0	0	0
5 - 10	31.3	4	165	-253,567	24	148	16,146.0	0	0	0.0	0	0
10 - 15	47.0	6	240	-380,351	7	42	24,218.9	0	0	0.0	0	0
15 - 20	62.7	6	251	-507,135	0	3	32,291.9	0	0	0.0	0	0
20 - 25	78.3	8	300	-633,918	0	3	40,364.9	0	0	0.0	0	0
25 - 30	94.0	4	152	-760,702	0	0	48,437.9	0	0	0.0	0	0
30 - 35	109.7	1	56	-887,486	0	0	56,510.9	0	0	0.0	0	0
35 - 40	125.3	1	42	-1,014,269	0	0	64,583.8	0	0	0.0	0	0
40 - 45	141.0	0	0	-1,141,053	0	0	72,656.8	0	0	0.0	0	0
45 - 50	156.7	0	18	-1,267,836	0	0	80,729.8	0	0	0.0	0	0
50 - 55	172.3	2	59	-1,394,620	0	0	88,802.8	0	0	0.0	0	0
55 - 60	188.0	0	18	-1,521,404	0	0	96,875.8	0	0	0.0	0	0
60 - 65	203.7	3	101	-1,648,188	0	0	104,948.8	0	0	0.0	0	0
65 - 70	219.3	0	0	-1,774,971	0	0	113,021.7	0	0	0.0	0	0
70 - 7 5	235.0	0	8	-1,901,755	0	0	121,094.7	0	0	0.0	0	0
75 - 80	250.7	0	19	-2,028,538	0	0	129,167.7	0	0	0.0	0	0
80 - 85	266.3	1	32	-2,155,322	0	0	137,240.7	. 0	0	0.0	0	0
85 - 90	282.0	3	102	-2,282,106	0	0	145,313.7	0	0	0.0	0	0
90 - 95	297.7	8	333	-2,408,889	0	0	153,386.7	0	0	0.0	0	0
95 - 100	313.3	10	375	-2,535,673	0	0	161,459.6	60	5,110	0.0	0	0
Hours Off	0.0	0	4,834	0	0	8,136	0.0	0	248	0.0	0	8,760

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2

ECO D - INSTALL EMS WATERSIDE EQ

				E (QUIP	MENT	ENE	RGY (CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	41731	37678	40796	40536	41264	39600	42199	40796	40536	41263	40536	42199	489,135
	PK	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	1428	1382	1428	1428	1382	1428	0	0	8,479
	PK	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.0	1.9
2			BAS	E UTILIT	Y									
	HOTLD	76	69	76	73	0	0	0	0	0	0	73	76	443
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
3			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	1428	1382	1428	1428	1382	1428	0	0	8,479
	PK	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.0	1.9
4			BAS	E UTILIT	Y									
	HOTLD	76	69	76	73	0	0	0	0	0	0	73	76	443
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2

ECO D - INSTALL EMS WATERSIDE EQ

				E Q	UIP	MENT	ENEI	RGY (const	נדקאנ	I O N			
Ref	Equip					Mont	-hly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
_														
5	a			UTILITY										
	PK	0.0	0.0	0.0	0.0	5208 7.0	5040 7.0	5208 7.0	5208 7.0	5040 7.0	5208 7.0	0.0	0.0	30,912 7.0
											,	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	,
6			BASE	UTILITY										
	HOTLD	203	184	203	197	0	0	0	0	0	0	197	203	1,188
	PK	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3
1	ACC2		TYPT	CAL AIR (COOLED	RECIP CH	TIJ.EB		Bldg. 590	CHW Equ	ipment			
_	ELEC	0	0	0	0	15767	20059	24563	24360	17847	4557	0	0	107,153
	PK	0.0	0.0	0.0	0.0	77.1	80.7	83.8	83.5	77.5	42.1	0.0	0.0	83.8
						<u> </u>								
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
,	ACC2		myn	CAL AIR	2001 PD	DDGID OU	****		Bldg. 591	CHW Equ	ipment			
2	ELEC	0	0	O O	0			24562	24260	17047	4550			1.05 .55
	PK	0.0	0.0	0.0	0.0	15767 77.1	80.7	24563 83.8	24360 83.5	17847 77.5	4557 42.1	0.0	0.0	107,153
	•	0.0	0.0	0.0	0.0	L		03.0	03.5		42.1	,	0.0	63.6
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
,	BO3 000G		2 00	a animo i		200 500	•	В	ldg. 592 Cl	HW Equipr	ment			
3	EQ1008S ELEC	. 0		G CENTRI					-			_	_	[]
	PK	0.0	0.0	0.0	0.0	34706 99.6	31338	34879	35318	29695 102.5	6949 71.7	0.0	0.0	172,885
						J							• • • • • • • • • • • • • • • • • • • •	
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	11086	10728	11086	11086	10728	11086	0	0	65,798
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
3	EQ5100		COOI	ING TOWE	R FANS									
	WATER	0	0	0	0	215	189	211	212	178	34	0	0	1,040
	PK	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.5	0.0	0.0	0.6
		_							•				•••	2.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO D - INSTALL EMS WATERSIDE EQ

				E (UIPM	ENT	ENEF	RGY C	ONST	JMPT:	ION			
Ref	Equip -					Mont	hlv Cons	sumption			·			
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5001		CHII	LLED WATE	ER PUMP -	CONST	ANT VOLUM	ΛE						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	49,459
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
3	EQ5010		CONT	DENSER WA	ATER PUMP	-CV (HIG	H EFFIC.)							
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	49,459
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
3	EQ5300		CON	rol pani	EL & INTE	RLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
1	TYPFAN		GENI	ERIC FAN			Bldg. 590	Airside Fa	ans					
	ELEC	4861	4390	4861	4704	4861	4704	4861	4861	4704	4861	4704	4861	57,232
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
2	TYPFAN		GEN	ERIC FAN			Bldg. 591	Airside Fa	ns					
	ELEC	4861	4390	4861	4704	4861	4704	4861	4861	4704	4861	4704	4861	57,232
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
* 3	TYPFAN		GENI	ERIC FAN			Bldg. 592	Airside Fa	ans					
	ELEC	3125	3225	3730	3584	3573	3158	3293	3350	3203	3125	3584	3662	40,612
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
4	TYPFAN		GENI	ERIC FAN										
	ELEC	19400	17522	19400	18774	19400	18774	19400	19400	18774	19400	18774	19400	228,417
	PK	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7
1			WAT	ERTUBE B	DILER		Bldg. 590) HW Equi	pment					
	GAS	244	203	104	101	0	0	0	0	0	0	101	135	888
	PK	0.8	2.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	2.3
1	EQ5020		HEA	TING WAT	ER CIRCUL	ATION P	UMP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,557
•	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
1	EQ5311		BOI	LER CONT	ROLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
2			WAT	ERTUBE B	OILER		Bldg. 59	I HW Equ	ipment	*				
	GAS	242	201	103	100	0	0	0	0	0	0	100	132	878
	PK	0.8	2.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	2.3

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO D - INSTALL EMS WATERSIDE EQ

				E Q	UIPM	E N T	ENER	G Y C	o n s u	MPTI	O N			
Ref	Equip					Mont	hlv Cons	umption						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MР							
	ELEC	1151	966	818	792	0	0	0	0	0	0	792	882	5,401
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
2	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	65	55	47	45	0	0	0	0	0	0	45	50	307
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
							Bldg. 592	2 HW Equi	pment					
3			WATE	RTUBE BO	ILER									
	GAS	561	323	275	266	0	0 ·	0	. 0	0	0	266	275	1,965
	PK	4.1	3.2	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	4.1
3	EQ5020		HEAT	ING WATE	R CIRCULA	ATION PU	МР							
	ELEC	1709	1317	1376	1332	0	0	0	0	0	0	1332	1376	8,443
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
3	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	58	44	47	45	0	0	0	0	0	0	45	47	285
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO E1 - WATER COOLED CENTRIFUGAL

				E (QUIPI	мент	ENE	RGY (const	JMPT:	1 O N			
Ref	Equip -					Mont	hly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	0ct	Nov	Dec	Total
0	LIGHTS													
	ELEC	41731	37678	40796	40536	41264	39600	42199	40796	40536	41263	40536	42199	489,135
	PK	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	8184	7920	8184	8184	7920	8184	0	0	48,576
	PK	0.0	0.0	0.0	0.0	11.0	11.0	11.0	11.0	11.0	11.0	0.0	0.0	11.0
1	EQ1008L	-	3-S	TG CENTR	.IFUGAL >	300 TON	s							
	ELEC	0	0	0	0	46082	47752	57584	58896	46577	19333	0	0	276,223
	PK	0.0	0.0	0.0	0.0	162.2	160.9	168.4	171.7	159.8	101.3	0.0	0.0	171.7
1	EQ5100		coo	LING TOW	ER FANS									
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	3952	0	0	45,078
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
1	EQ5100		coo	LING TOW	ER FANS									
	WATER	0	0	0	0	322	329	400	405	317	125	0	0	1,899
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	0.8	0.0	0.0	1.1

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By: HUITT & ZOLLARS

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

ECO E1 - WATER COOLED CENTRIFUGAL

				E Q	UIPN	MENT	ENE	RGY (CONSI	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13838	13392	13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
1	EQ5010		COND	ENSER WA	rer pumi	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	11086	10728	11086	11086	10728	11086	0	0	65,798
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4 ECO E2 - WATER COOLED CENTRIFUGAL VFD

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep 0ct Total 0 LIGHTS ELEC 41731 37678 40796 40536 41264 39600 42199 40796 40536 41263 40536 42199 489,135 233.8 PK 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233 8 1 MISC LD ELEC 0 ٥ 0 0 0 0 0 0 ٥ ٥ n 0 0 0.0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 MISC LD GAS 0 0 0 0 0 0 0 0 0 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 MISC LD 0 OIL 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4 MISC LD P STEAM 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 MISC LD P HOTH20 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6 MISC LD P CHILL 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 8184 7920 8184 8184 7920 8184 0 0 48,576 PK 0.0 0.0 0.0 0.0 11.0 11.0 11.0 11.0 11.0 11.0 0.0 0.0 11.0 1 EQ1009 3-STG CTV WITH VARIABLE FREQUENCY DRV ELEC 0 0 0 0 42540 42831 51952 52516 41374 15486 0 0 246,700 PK 0.0 0.0 0.0 0.0 171.0 168.3 171.0 172.0 162.7 106.2 172.0 0.0 0.0 1 EQ5100 COOLING TOWER FANS ELEC 0 2028 0 0 0 731 1200 2534 1261 0 0 0 7,754 PK 0.0 0.0 0.0 0.0 8.2 8.4 10.1 11.2 9.1 2.7 0.0 0.0 11.2 1 EQ5100 COOLING TOWER FANS WATER 0 0 0 325 395 399 312 122 1,872 0 0 PK 0.0 0.0 0.0 0.0 1.1 1.1 1.1 1.1 1.1 0.8 0.0 0.0 1.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4 ECO E2 - WATER COOLED CENTRIFUGAL VFD

				E Q	UIPI	HENT	ENE	RGY (CONSI	UMPT	ои			
Ref	Equip					Mont	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13838	13392	13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
1	EQ5010		COND	ENSER WA	rer pumi	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	11086	10728	11086	11086	10728	11086	0	0	65,798
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	. 0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

PK

0.0

0.0

0.0

0.0

1.1

1.1

1.1

1.1

1.1

0.8

0.0

0.0

1.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1
ECO E3 - WATER COOLED SCREW

----- EQUIPMENT ENERGY CONSUMPTION ---------- Monthly Consumption -----Ref Equip Num Code Jan Feb Apr Mar May June July Aug Sep Oct Total 0 LIGHTS ELEC 41731 37678 40796 40536 41264 39600 42199 40796 40536 41263 40536 42199 489,135 233.8 233.8 РK 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 233.8 1 MISC LD ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 MISC LD GAS 0 0 0 0 0 0 0 0 0 0 0 0 ٥ PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 MISC LD OIL 0 0 0 0 0 0 0 0 0 0 0 0 0 PΚ 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4 MISC LD P STEAM 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 MISC LD Р НОТН2О 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6 MISC LD P CHILL 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 8184 7920 8184 8184 7920 8184 0 0 48,576 PK 0.0 0.0 0.0 0.0 11.0 11.0 11.0 11.0 11.0 11.0 0.0 0.0 11.0 1 YSCRW22 YORK W.C. SCREW CHILLER ELEC 0 0 0 0 46340 47649 56904 58164 46507 18305 0 0 273,868 PK 0.0 0.0 0.0 0.0 177.3 175.8 183.3 186.0 174.4 102.6 0.0 0.0 186.0 1 EQ5100 COOLING TOWER FANS ELEC 0 0 0 0 8333 8064 8333 8333 8064 3937 0 0 45,063 PK 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.2 11.2 0.0 0.0 11.2 1 EQ5100 COOLING TOWER FANS WATER Ω 0 0 0 323 329 399 405 317 124 0 0 1,897

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1

ECO E3 - WATER COOLED SCREW

				E Q	UIPI	MENT	ENE	RGY (CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13838	13392	13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
1	EQ5011		COND	ENSER WA	TER PUM	P-CV (MED	IUM EFFI	C.)						
	ELEC	0	0	0	0	11086	10728	11086	11086	10728	11086	0	0	65,798
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO F - REPLACE BLRS WITH CENTRAL BLRS

				E (UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	41731	37678	40796	40536	41264	39600	42199	40796	40536	41263	40536	42199	489,135
	PK	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8	233.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	. 0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	E UTILIT	Y									
	HOTLD	357	323	357	346	0	0	0	0	0	0	346	357	2,085
	PK	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
1		•	HIG	H EFFICI	ENCY MOD	ULAR FIR	ETUBE BO	IL.						
	GAS	967	749	390	378	0	0	0	0	0	0	378	467	3,328
	PK	4.3	4.3	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.2	4.3
1	EQ5020		HEA'	TING WAT	ER CIRCU	LATION P	UMP							
	ELEC	5580	5040	5580	5400	0	0	0	0	0	0	5400	5580	32,580
	PK	7.5	7.5	7.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	7.5	7.5	7.5
1	EQ5311		BOI	LER CONT	ROLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

01 Card - Job Information

Project: 03-0185.06 EEAP BOILER-CHILLER STUDY

Location: FORT SAM HOUSTON, TEXAS

Client: CORPS OF ENGINEERS - FORT WORTH, TEXAS

Program User: HUITT-ZOLLARS, INC.

Comments: AREA 1000-BLDGS 1000, 1001, 1029, 1088

Card 08-			Clim	atic Infor	mation			
	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
SANANTON	†							

----- Load Section Alternative #1 -----

Card 19- Load Alternative -

Number

Description

1

EXISTING CONDITIONS

Card 2	rd 20 General Room Parameters										
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Туре	Height	Resistance	Height	Multiplier	Zone	
5	5	1001 LIB-EMT	95.5	95.5	8	2	2.54	11.5			
10	10	1001 CLINIC	151.5	152	8	2	2.54	11.5			
15	15	BLDG 1029	196	196	8	2	2.54	12			
20	20	1000 SURGERY	154.5	154.5	8	2	2.54	13.1			
25	25	1000 ANCILLARY	149	149	8	2	2.54	13.1			
30	30	1000 NURSING	265	265.5	8	2	2.54	13.1			
35	35	1000 ADMIN	233.5	234	8	2	2.54	13.1			
40	40	1000 DINING	53	53	8	2	2.54	13.1			
45	45	1000 COMPUT RM	26.5	27	8	2	2.54	13.1			

Card 21	Card 21Card 21												
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet			
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On			
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor			
5	78	50	78		70	70			LIGHT30	YES			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
10	78	50	78		70	70			LIGHT30	YES
15	78	50	78		70	70			LIGHT30	YES
20	68	55	68		68	68			HEAVY130	NO
25	72	50	72		72	72			HEAVY130	NO
30	76	50	76		76	76			HEAVY130	NO
35	78	50	78		70	70			HEAVY130	YES
40	78	50	78		70	70			HEAVY130	NO
45	72	50	72		72	72			HEAVY130	NO

Card 22				Roof Para	ameters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Туре	Direction	Tilt	Alpha
5	1	NO	67	21	0.12	12		80	
10	1	NO	90	90	0.12	12		80	
15	1	NO	98	98	0.12	12			
20	1	NO	95.5	95.5	0.10	12			
25	1	NO	48.5	49	0.10	12			
30	1	NO	123.5	124	0.10	12			
35	1	NO	67	67	0.10	12			
40	1	NO	28	28.5	0.10	12			

Card 24-				Wall P	arameters Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
	Number	Length	Height	U-Value	Туре	Direction			Multiplier
5	1	98	11.5	0.11	64	20	1110	Aipha	Mulcipitei
5	2	44	11.5	0.11	64	110			
5	3	98	11.5	0.11	64	200			
5	4	124	11.5	0.11	64	290			
10	1	189 -	11.5	0.11	64	20			
10	2	597	11.5	0.11	64	110			
10	3	152	11.5	0.11	64	200			
10	4	599	11.5	0.11	64	290			
15	1	213	12	0.18	64	330			
15	2	512	12	0.18	64	60			
15	3	213	12	0.18	64	150			
15	4	918	12	0.18	64	240			
20	1	337	13.1	0.18	64	0			
20	2	231	13.1	0.18	64	90			
20	3	185	13.1	0.18	64	180			
20	4	215	13.1	0.18	64	270			
25	1	308	13.1	0.18	64	0			

Card 24				Wall Pa	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
25	2	190	13.1	0.18	64	90			
25	3	262	13.1	0.18	64	180			
25	4	203	13.1	0.18	64	270			
30	1	1226	13.1	0.18	64	0			
30	2	414	13.1	0.18	64	90			
30	3	1338	13.1	0.18	64	180			
30	4	492	13.1	0.18	64	270			
35	1	531	13.1	0.18	64	0			
35	2	247	13.1	0.18	64	90			
35	3	1065	13.1	0.18	64	180			
35	4	319	13.1	0.18	64	270			
40	1	38	13.1	0.18	64	0			
40	2	74	13.1	0.18	64	90			
40	3	38	13.1	0.18	64	180			
45	1	40	13.1	0.18	64	0			
45	2	18	13.1	0.18	64	270			

Card 25	rd 25 Wall/Glass Parameters										
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
5 .	1	6.5	3	4	1.1	1					
5	2	6.5	3	2	1.1	1					
5	3	6.5	3	3	1.1	1					
5	4	6.5	3	7	1.1	1					
10	1	6.5	3	15	1.1	1					
10	2	6.5	3	53	1.1	1					
10	3	6.5	3	10	1.1	1					
10	4	6.5	3	58	1.1	1					
15	1	6.5	3.5	17	1.1	1					
15	2	6.5	3.5	41	1.1	1					
15	3	6.5	3.5	22	1.1	1					
15	4	6.5	3.5	81	1.1	1					
20	1	8	4	33	1.1	0.67					
20	2	8	4	28	1.1	0.67					
20	3	8	4	18	1.1	0.67					
20	4	8	4	18	1.1	0.67					
25	1	8	4	30.5	1.1	0.67					
25	2	8	4	18	1.1	0.67					
25	3	8	4	29	1.1	0.67					
25	4	8	4	16	1.1	0.67					
30	1	8	4	118	1.1	0.67					
30	2	8	4	38	1.1	0.67					
30	3	8	4	158	1.1	0.67					
30	4	8	4	42	1.1	0.67					

Card 25					W	Jall/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
35	1	8	4	51	1.1	0.67					
35	2	8	4	22	1.1	0.67					
35	3	8	4	121	1.1	0.67					
35	4	8	4	33	1.1	0.67				•	
40	1	8	4	4	1.1	0.67					
40	2	8	4	7	1.1	0.67					
40	3	8	4	1	1.1	0.67					
45	1	8	4	4	1.1	0.67					
45	2	8	4	2	1.1	0.67					

Card 26				S	chedules -						
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting	
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls	
5	FSHLIB	AVAIL									
10	FSHOFFIC	FSHOFFIC									
15	FSHOFFIC	FSHOFFIC									
20	AVAIL	AVAIL									
25	AVAIL	AVAIL									
30	AVAIL	AVAIL	a .								
35	AVAIL	AVAIL									
40	FSHDINP	FSHDINL									
45	AVAIL	AVAIL									

Card 27	rd 27People and Lights										
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
5	12	PEOPLE	250	200	2.1	WATT-SF	ASHRAE2				
10	77	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
15	100	PEOPLE	250	200	2.2	WATT-SF	ASHRAE2				
20	418	SF-PERS	250	200	2.3	WATT-SF	ASHRAE2				
25	418	SF-PERS	250	200	2.5	WATT-SF	ASHRAE2				
30	418	SF-PERS	250	200	1.3	WATT-SF	ASHRAE2				
35	418	SF-PERS	250	200	1.8	WATT-SF	ASHRAE2				
40	418	SF-PERS	250	200	1.2	WATT-SF	ASHRAE2				
45	1	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				

Card 28				Mis	cellaneous	Equipment	:				
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	OFFICE EQ	1.3	WATT-SF	AVAIL	NONE					

Card 28 Miscellan						Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
10	1	OFFICE EQ	1.9	WATT-SF	FSHOFFIC	NONE					
15	1	OFFICE EQ	2.3	WATT-SF	FSHOFFIC	NONE					
20	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
25	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
30	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
35	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
40	1	DINING EQ	1	WATT-SF	FSHDINL	NONE					
45	1	COMPUTER RM EQ	4.0	WATT-SF	AVAIL	NONE					

Card 29	Card 29Ventilation					Room Airflows							
		Ventil	ation			Infile	tration						
Room	Cooling		Coo	ling	Неа	ting	Reheat	Minimum					
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units			
5	20	CFM-P	20	CFM-P									
10	20	CFM-P	20	CFM-P									
15	20	CFM-P	20	CFM-P									
20	0.307	CFM-SF	0.307	CFM-SF									
25	0.307	CFM-SF	0.307	CFM-SF									
30	0.307	CFM-SF	0.307	CFM-SF									
35	0.307	CFM-SF	0.307	CFM-SF									
40	0.307	CFM-SF	0.307	CFM-SF									
45	0.307	CFM-SF	0.307	CFM-SF									

Card 31 Partition Parameters											
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent		
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No		
15	1	459	12	0.29	110	HRLYOADB					
20	1	70	13.1	0.34	110	HRLYOADB					
35	1	70	12	0.18	110	HRLYOADB					

----- System Section Alternative #1 -----

Card 39- System Alternative

Number Description

EXISTING AIRSIDE EQUIPMENT

```
Card 40----- System Type ------
            -----OPTIONAL VENTILATION SYSTEM-----
            Ventil
System
    System Deck Cooling Heating Cooling Heating Static
Set
             Location SADBVh SADBVh Schedule Schedule Pressure
Number Type
1
     TRH-AUX
2
     TRH-AUX
3
     TRH-AUX
4
     TRH-AUX
5
     TRH-AUX
6
     FC
7
     BPMZ
     BPMZ
8
      BPMZ
```

Card 41					Zone A	ssignmen	ıt					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	20	20										
2	25	25										
3	30	30										
4	35	35										
5	40	40										
6	45	45										
7	5	5										
8	10	10										
9	15	15										

Card 42				Fan	SP an	d Duct P	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										
2	1.0		•								
3	1.0										
4	1.0										
5	1.0			•							
6	1.0										
7	1.0										
8	1.0										
9	1.0										

Card 43				Airflow D	esign Tem					
System	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Design
Set	Cooling	Cooling	Heating	Heating	Cooling	Cooling	Preheat	Preheat	Room	Ht Rec
Number	SADB	SADB	SADB	SADB	Lv DB	Lv DB	Lv DB	Lv DB	RH	Diff
1	55.7	55.7								
2	58.1	58.1								

Card 43				Airflow D	esign Tem	peratures	3				
System	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Design	
Set	Cooling	Cooling	Heating	Heating	Cooling	Cooling	Preheat	Preheat	Room	Ht Rec	
Number	SADB	SADB	SADB	SADB	Lv DB	Lv DB	Lv DB	Lv DB	RH	Diff	
3	58.3	58.3									
4	58.3	58.3									
6	63	63									

Card 4	4					s	ystem Opt	ions					
System	Econ	Econ	Max Pct	Direct	Indirect	1st Stage			Ex	haust Air He	eat Recove	ery	
Set	Туре	On	Outside	Evap	Evap	Evap	Fan	Effectiv	reness	Control	Type	Exh-Side	Deck
Number	Flag	Point	Air	Cooling	Cooling	Cooling	Cycling	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2
1	DRY-BULB	65	100										J
2	DRY-BULB	65	100										
3	DRY-BULB	65	100										
4	DRY-BULB	65	100										

Card 45				Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1										FTSAMHTG
2										FTSAMHTG
3										FTSAMHTG
4										FTSAMHTG
5										FTSAMHTG
7	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
8	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
9	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

Card 49	Card 49 Heat:					Overrides				
System	MAIN H	EATING	PREH	EAT	REH	EAT	HUMIDIF	ICATION	AUX HE	ATING
Set	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1									48.9	MBH
2									49.7	MBH
3									203	MBH
4									113.0	MBH
5									6.5	мвн

⁻⁻⁻⁻⁻ Equipment Section Alternative #1 -----

```
Card 59----- Equipment Description / TOD Schedules -----
        Elec Consump Elec Demand Demand
                                                          ---- Demand Limit ---
Alternative Time of Day Time of Day Limit
                                                                Temperature
Number Schedule Schedule Max KW Alternative Description
                                                         Schedule Drift
                              EXISTING WATERSIDE EQUIPMENT
Card 60------ Cooling Load Assignment-----
Load All Coil Cooling
Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-
Ref Cool Ref Sizing Begin End Begin End
1
                 1 6
   1
   3
                 9 9
3 5
Card 62----- Cooling Equipment Parameters
Ref Code Of
              --Capacity--
                         ----Energy----
                                      --Capacity--
                                                  ----Energy----
                                                               Order Seq Limit
Num Name Units Value Units
                         Value Units Value Units Value Units
                                                               Num Type Number
1 EQ1001S 1 400 TONS
                        252 KW
                                                                    PAR
2 EQ1001S 1 400 TONS
                         277 KW
                                                                   PAR
3 EQ1307 1 6 TONS
                         7.6 KW
                                                               1
                                                                   PAR
4 EQ1001S 1 90 TONS
                        0.95 KW-TON
                                                                   PAR
5 EQ1008S 1 160 TONS
                         100 KW
Card 63----- Cooling Pumps and References -----
Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-
Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold
Num Value
         Units
                 Value Units Value Units Control Storage Tower
  37.3
          KW
                 29.8
                        KW
2 37.3
          KW
                 29.8
                        KW
4 11.2
                 11.2
          KW
                        KW
                                                         1
5 18.6 KW
                 18.6
                        KW
Card 65------ Heating Load Assignment
Load All Coil
Assignment Loads To
              -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-
Reference Heating Ref Begin End Begin End
       1
               1
                   6
       4
               7
       5
               9
Card 66----- Optional Heating Coil Assignment -----
                                      Misc.
Assignment Main Preheat Reheat Mech Aux Optional Heating
Reference Coil Coil Coil Humidif Coil Ventil Load
```

Card 67	rd 67 Peating Equipment Parameters													
Heat	Equip		HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BLR2MOD	1	18.6	KW	4230	MBH	5500	MBH	1				-	
2	BLR2MOD	1	18.6	KW	4230	MBH	5500	MBH	2					
3	STEAMBLR	1			3072	MBH	5223	MBH						
4	STEAMBLR	1			761.9	MBH	1050	MBH						
5	BOILERWT	1	2.2	KW	1887	MBH	2500	MBH						

Card 69		1	Fan Equipm	ent Parame	ters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						

Card 70	Card 70 Fan Equipment KW Overrides											
		MAIN S	YSTEM-		OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	20.1											
2	13.0											
3	20.5											
4	29.8											
5	5.6											
6	2.2											
7	3.7											
8	16.8											
9	17.2											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
1	DISTR LOSSES	25.5	TONS	AVAIL	CHILL-LD	1		,	-

Card 71			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Туре	Number	Number	Temp	Temp
2	DISTR LOSSES	10.6	TONS	AVAIL	CHILL-LD	2			
3	DISTR LOSSES	0.2	TONS	AVAIL	CHILL-LD	3			
4	DISTR LOSSES	4.5	TONS	FTSAMCLG	CHILL-LD	4			
5	DISTR LOSSES	7.3	TONS	FTSAMCLG	CHILL-LD	5			
6	DISTR LOSSES	48.5	MBH	AVAIL	HOT-LD	1			
7	DISTR LOSSES	0	MBH	AVAIL	HOT-LD	2			
8	DISTR LOSSES	44	MBH	FTSAMHTG	HOT-LD	3			
9	DISTR LOSSES	13.0	MBH	FTSAMHTG	HOT-LD	4			
10 .	DISTR LOSSES	12.6	MBH	FTSAMHTG	HOT-LD	5			

Card 74				Condenser	g Tower Pa						
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Туре	Cells	Low Spd	Value	Units
1	EQ5100			11.2	KW	T-WATER	CTOWER	1			
2	EQ5100			7.46	KW	T-WATER	CTOWER	1	50	4.36	KW
3	EQ5100			18.6	KW	T-WATER	CTOWER	1			
4	EQ5100			18.6	KW	T-WATER	CTOWER	1			

----- Load Section Alternative #2 -----

Card 19- Load Alternative -

Number Description
2 ECO G-INSTALL EMS FOR HVAC EQUIPMENT

Card 20	Card 20 General Room Parameters												
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter		
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth		
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone			
5	5	1001 LIB-EMT	95.5	95.5	8	2	2.54	11.5					
10	10	1001 CLINIC	151.5	152	8	2	2.54	11.5					
15	15	BLDG 1029	196	196	8	2	2.54	12					
20	20	1000 SURGERY	154.5	154.5	8	2	2.54	13.1					
25	25	1000 ANCILLARY	149	149	8	2	2.54	13.1					
30	30	1000 NURSING	265	265.5	8	2	2.54	13.1					
35	35	1000 ADMIN	233.5	234	8	2	2.54	13.1					
40	40	1000 DINING	53	53	8	2	2.54	13.1					
45	45	1000 COMPUT RM	26.5	27	8	2	2.54	13.1					

Card 21	Card 21 Thermostat Parameters												
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet			
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On			
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor			
5	78	50	78		70	70			LIGHT30	YES			
10	78	50	78		70	70			LIGHT30	YES			
15	78	50	78		70	70			LIGHT30	YES			
20	68	55	68		68	68			HEAVY130	NO			
25	72	50	72		72	72			HEAVY130	NO			
30	76	50	76		76	76			HEAVY130	NO			
35	78	50	78		70	70			HEAVY130	YES			
40	78	50	78		70	70			HEAVY130	NO			
45	72	50	72		72	72			HEAVY130	NO			

Card 22	Card 22 Roof Parameters											
		Roof										
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof			
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha			
5	1	NO	67	21	0.12	12		80				
10	1	NO	90	90	0.12	12		80				
15	1	NO	98	98	0.12	12						
20	1	NO	95.5	95.5	0.10	12						
25	1	NO	48.5	49	0.10	12						
30	1	NO	123.5	124	0.10	12						
35	1	NO	67	67	0.10	12						
40	1	NO	28	28.5	0.10	12						

Card 24	Card 24 Wall Parameters										
					Wall				Ground		
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance		
Number	Number	Length	Height	U-Val ue	Туре	Direction	Tilt	Alpha	Multiplier		
5	1	98	11.5	0.11	64	20					
5	2	44	11.5	0.11	64	110					
5	3	98	11.5	0.11	64	200					
5	4	124	11.5	0.11	64	290					
10	1	189	11.5	0.11	64	20					
10	2	597	11.5	0.11	64	110					
10	3	152	11.5	0.11	64	200					
10	4	599	11.5	0.11	64	290					
15	1	213	12	0.18	64	330					
15	2	512	12	0.18	64	60					
15	3	213	12	0.18	64	150					
15	4	918	12	0.18	64	240					
20	1	337	13.1	0.18	64	0					
20	2	231	13.1	0.18	64	90					
20	3	185	13.1	0.18	64	180					
20	4	215	13.1	0.18	64	270					
25	1	308	13.1	0.18	64	0					

Card 24------ Wall Parameters -----Wall Ground Wall Wall Wall Wall Constuc Wall Wall Wall Reflectance Number Number Length Height U-Value Type Direction Tilt Alpha Multiplier 13.1 0.18 0.18 13.1 13.1 0.18 0.18 13.1 13.1 0.18 13.1 0.18 13.1 0.18 13.1 0.18 13.1 0.18 13.1 0.18 0.18 13.1 0.18 13.1 0.18 13.1 13.1 0.18 13.1 0.18 13.1 0.18

Card 25	Card 25 Wall/Glass Parameters											
				Pct Glass			External	Internal	Percent		Inside	
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible	
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance	
5	1	6.5	3	4	1.1	1						
5	2	6.5	3	2	1.1	1						
5	3	6.5	3	3	1.1	1						
5	4	6.5	3	7	1.1	1						
10	1	6.5	3	15	1.1	1						
10	2	6.5	3	53	1.1	1						
10	3	6.5	3	10	1.1	1						
10	4	6.5	3	58	1.1	1						
15	1	6.5	3.5	17	1.1	1						
15	2	6.5	3.5	41	1.1	1						
15	3	6.5	3.5	22	1.1	1						
15	4	6.5	3.5	81	1.1	1						
20	1	8	4	33	1.1	0.67						
20	2	8	4	28	1.1	0.67						
20	3	8	4	18	1.1	0.67						
20	4	8	4	18	1.1	0.67						
25	1	8	4	30.5	1.1	0.67						
25	2	8	4	18	1.1	0.67						
25	3	8	4	29	1.1	0.67						
25	4	8	4	16	1.1	0.67						
30	1	8	4	118	1.1	0.67						
30	2	8	4	38	1.1	0.67						
30	3	8	4	158	1.1	0.67						
30	4	8	4	42	1.1	0.67						

Card 25	5				W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Type	Ret. Air	Transmittance	Reflectance
35	1	8	4	51	1.1	0.67					
35	2	8	4	22	1.1	0.67					
35	3	8	4	121	1.1	0.67					
35	4	8	4	33	1.1	0.67					
40	1	8	4	4	1.1	0.67					
40	2	8	4	7	1.1	0.67					
40	3	8	4	1	1.1	0.67					
45	1	8	4	4	1.1	0.67					
45	2	8	4	2	1.1	0.67					

Card 26				5	Schedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHLIB	AVAIL								
10	FSHOFFIC	FSHOFFIC				DAYSCHED				
15	FSHOFFIC	FSHOFFIC				DAYSCHED				
20	AVAIL	AVAIL								
25	AVAIL	AVAIL								
30	AVAIL	AVAIL								
35	AVAIL	AVAIL								
40	FSHDINP	FSHDINL								
45	AVAIL	AVAIL								

Card 27	'				Peopl	e and Ligh	ıts				
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Туре	Factor	Ret. Air	Point 1	Point 2
5	12	PEOPLE	250	200	2.1	WATT-SF	ASHRAE2				
10	77	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
15	100	PEOPLE	250	200	2.2	WATT-SF	ASHRAE2				
20	418	SF-PERS	250	200	2.3	WATT-SF	ASHRAE2				
25	418	SF-PERS	250	200	2.5	WATT-SF	ASHRAE2				
30	418	SF-PERS	250	200	1.3	WATT-SF	ASHRAE2				
35	418	SF-PERS	250	200	1.8	WATT-SF	ASHRAE2				
40	418	SF-PERS	250	200	1.2	WATT-SF	ASHRAE2				
45	1	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	OFFICE EQ	1.3	WATT-SF	AVAIL	NONE					

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air		•
10	1	OFFICE EQ	1.9	WATT-SF	FSHOFFIC	NONE					racii
15	1	OFFICE EQ	2.3	WATT-SF	FSHOFFIC	NONE					
20	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
25	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
30	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
35	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
40	1	DINING EQ	1	WATT-SF	FSHDINL	NONE					
45	1	COMPUTER RM EQ	4.0	WATT-SF	AVAIL	NONE					

		Ventil	ation			Infil	tration			
Room	Coo	ling	Hea	ting	Coo	ling	Hea	ting	Reheat	Minimum-
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
5	20	CFM-P	20	CFM-P						
10	20	CFM-P	20	CFM-P						
15	20	CFM-P	20	CFM-P						
20	0.307	CFM-SF	0.307	CFM-SF						
25	0.307	CFM-SF	0.307	CFM-SF						
30	0.307	CFM-SF	0.307	CFM-SF						
35	0.307	CFM-SF	0.307	CFM-SF						
10	0.307	CFM-SF	0.307	CFM-SF						
15	0.307	CFM-SF	0.307	CFM-SF						

Card 31			Part	ition Param	eters -				
Room	Partition		Partition						
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No
15	1	459	12	0.29	110	HRLYOADB		_	
20	1	70	13.1	0.34	110	HRLYOADB			
35	1	70	12	0.18	110	HRLYOADB			

------ System Section Alternative #2 -----

Card 39- System Alternative Number Description

2 ECO G-INSTALL EMS AIRSIDE SYSTEMS

Card 40)		Syste	em Type			
					ATION SYST		
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	TRH-AUX						
2	TRH-AUX						
3	TRH-AUX						
4	TRH-AUX						
5	TRH-AUX						
6	FC						
7	BPMZ						
8	BPMZ						
9	BPMZ						

Card 41					Zone A	ssignmer	ıt					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End		
1	20	20			_		J		Degin	BIIG	Begin	End
2	25	25										
3	30	30										
4	35	35										
5	40	40										
6	45	45										
7	5	5										
8	10	10										
9	15	15										

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										racii
2	1.0										
3	1.0										
4	1.0										
5	1.0										
б	1.0										
7	1.0										
8	1.0										
9	1.0										

Card 43				Airflow D	esign Tem	peratures				
System	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Design
Set	Cooling	Cooling	Heating	Heating	Cooling	Cooling	Preheat	Preheat	Room	Ht Rec
Number		SADB	SADB	SADB	Lv DB	Lv DB	Lv DB	Lv DB	RH	Diff
1	55.7	55.7								DILL
2	58.1	58.1								

System	Minimum	Maximu	ım Mini	mum Maxi	mum Mir	imum	Maximum	Minimum	Maximum	Minimum	Desim			
Set	Cooling	Coolir	g Heat	ing Heat	ing Coc	ling	Cooling	Preheat	Preheat	Poom	Ht Rec			
Number		SADB	SADB				Lv DB	Lv DB	Lv DB	RH	Diff			
3	58.3	58.3							2. 22	141	DIII			
4	58.3	58.3												
6	63	63												
Card 44							8	System Opt	ions					
System	Econ	Econ	Max Pct	Direct	Indire	ct 1s	st Stage					Air Heat Recov		
Set	Туре		Outside		Evap		/ap	Fan				ntrol Type		
Number	Flag	Point	Air	Cooling	Coolin	g Co	ooling	Cycling	Stage 1		2 Stage		Stage 1	Stage
1	DRY-BULB	65	100					_	-	.		- Jonge 1	beage 1	Stage
2	DRY-BULB	65	100											
3	DRY-BULB	65	100											
4	DRY-BULB	65	100											
7	DRY-BULB	65	100											
	DRY-BULB		100											
9	DRY-BULB	65	100											
System Set	Main Cooling		1	Direct Evap		t Aux	ciliary		Main Preheat	Reheat	Mech.	Auxiliary Heating		
System Set Number 1 2 3	Main Cooling		1	Direct Evap	Indirec Evap	t Aux Coc	ciliary	Main Heating	Main		Mech.	Auxiliary		
System Set Number 1 2 3 4	Main Cooling Coil	Econo	1	Direct Evap	Indirec Evap	t Aux Coc	ciliary Dling 1	Main Heating Coil	Main Preheat Coil	Reheat Coil	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG		
Card 45 System Set Number 1 2 3 4 5	Main Cooling Coil FTSAMCLO	Econo	1	Direct Evap	Indirec Evap	t Aux Coc	tiliary bling .1	Main Heating Coil FTSAMHTG	Main Preheat Coil FTSAMHTG	Reheat Coil FTSAMHT	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7	Main Cooling Coil FTSAMCLG	Econo	1	Direct Evap	Indirec Evap	t Aux Coc	tiliary bling .1	Main Heating Coil FTSAMHTG FTSAMHTG	Main Preheat Coil FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTC	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5	Main Cooling Coil FTSAMCLO	Econo	1	Direct Evap	Indirec Evap	t Aux Coc	tiliary bling .1	Main Heating Coil FTSAMHTG FTSAMHTG	Main Preheat Coil FTSAMHTG	Reheat Coil FTSAMHTC	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9	Main Cooling Coil FTSAMCLG FTSAMCLG	Econo] mizer (Direct Evap Coil	Indirec Evap Coil	t Aux Coc Coi	ciliary oling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG	Main Preheat Coil FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System	Main Cooling Coil FTSAMCLG FTSAMCLG FTSAMCLG	Econo	mizer (Direct Evap Coil	Indirec Evap Coil	t Aux Coc Coi	ciliary cling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG	Main Preheat Coil FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Discrim Control	Econo S S S S Night Purge	mizer o	Direct Evap Coil iimum Opert St	Indirect Evap Coil SMS/BAS: otimum top	Schedu	ciliary cling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO STEM HR Chaust	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number	Main Cooling Coil FTSAMCLG FTSAMCLG FTSAMCLG	Econo S S S S Night Purge	mizer o	Direct Evap Coil iimum Opert St	Indirect Evap Coil SMS/BAS: otimum top	Schedu	ciliary cling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO STEM HR Chaust	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number 8	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Discrim Control	Econo S S S S Night Purge	Opt Staule Sch	Direct Evap Coil Eimum Og Eirt St Redule Sc ETART Of	Indirect Evap Coil SMS/BAS: otimum top	Schedu	ciliary cling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO STEM HR Chaust	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Discrim Control	Econo S S S S Night Purge	Opt Staule Sch	Direct Evap Coil Eimum Og art St addule Sc ETART Of	Indirect Evap Coil EMS/BAS: ctimum cop chedule	Schedu On Pe	ciliary cling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO STEM HR Chaust	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number 8	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Discrim Control	Econo S S S S Night Purge	Opt Staule Sch	Direct Evap Coil Eimum Og art St addule Sc ETART Of	Indirect Evap Coil EMS/BAS: Dimmercop Chedule PSTOP	Schedu On Pe	ciliary cling .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO STEM HR Chaust	Mech. Humidit	Auxiliary Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number 3 9	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Control Schedule	Econo Night Purge Schedu	Opt Staule Sch	Direct Evap Coil Finum Oi Fint St Redule St FTART OI	Indirect Evap Coil EMS/BAS: ctimum cop chedule estop estop	Schedu On Pe Sched	ciliary cling .1 lesDUTY riod Pa ule Le	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma: ngth Of:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO vstem HR chaust chedule	Mech. Humidit	Auxiliary Heating Ty Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number 8 9	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Ontrol Schedule	Econo Night Purge Sched	Opt Sta	Direct Evap Coil Cimum Op art St Redule Sc TART ODPREHEAT	EMS/BAS : ctimum cop chedule estop estop	Schedu On Pe Sched	ciliary cling .1 .1DUTY criod Pa cule Le	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma: ngth Of:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG TTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTC FTSAMHTC FTSAMHTC vstem HR chaust chedule	Mech. Humidit	Auxiliary Heating Ty Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number 8 9	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Ontrol Schedule	Econo Night Purge Sched	Opt Sta	Direct Evap Coil Cimum Op art St Redule Sc TART ODPREHEAT	EMS/BAS : ctimum cop chedule estop estop	Schedu On Pe Sched	ciliary cling .1 .1DUTY criod Pa cule Le	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma: ngth Of:	Main Preheat Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG TTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Reheat Coil FTSAMHTC FTSAMHTC FTSAMHTC vstem HR chaust chedule	Mech. Humidit	Auxiliary Heating Ty Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		
System Set Number 1 2 3 4 5 7 8 9 Card 46 System Set Number 8 9	Main Cooling Coil FTSAMCLO FTSAMCLO FTSAMCLO Ontrol Schedule	Econo Night Purge Sched	Opt Sta	Direct Evap Coil Cimum Opert Standard Operation Operatio	EMS/BAS : ctimum cop chedule estop estop	Schedu On Pe Sched	ciliary cling .1 .1	Main Heating Coil FTSAMHTG FTSAMHTG FTSAMHTG CYCLING ttern Ma: ngth Of:	Main Preheat Coil FTSAMHTG FT	Reheat Coil FTSAMHTO FTSAMHTO FTSAMHTO ACTION Apacity C	Mech. Humidit G G G G G G G G G G G G G G G G G G	Auxiliary Heating Ty Coil FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG		

1 37.3 KW

29.8

rd ⁄ste	mMAII	N HEATI	NG	PREH	EAT	REH	EAT	HUMIDIF	ICATION	AUX HE	ATING		
et					Capacity								
umbe	r Value	Uni		Value	Units	Value	Units	Value	Units	Value	Units	-3	
										49.7	мвн		
										203	мвн		
										113.0	MBH		
5										6.5	мвн		
										0.5	1.2.1		
	****		Equip	ment Secti	on Alterna	ative #2 -							
ard	59				Equipment I	Descriptio	n / TOD Sc	hedules					-
	E:	lec Con	sump	Elec Deman	d Demand					De	emand Li	mit	-
Alter	native T	ime of	Day	Time of Da	y Limit						Temp	eratur	e
Numbe	r S	chedule	:	Schedule	Max KW	Alternati	ve Descrip	tion		Schedul	Le D	rift	
2						ECO G-INS	TALL EMS W	ATERSIDE S	YSTEMS				
oad	All Coil	Cooli	.ng										
Load Asgn Ref 1	All Coil Loads To Cool Ref 1 3	Cooli Equip	ng ment g	-Group 1- Begin End 1 6 7 8	-Group 2- Begin End	-Group 3	Group	4Group	5Grou	ıp 6Gro	oup 7-	-Group	8Gro
Load Asgn Ref 1 2 3	All Coil Loads To Cool Ref 1 3 5	Cooli Equip Sizir	ng ment g	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End	-Group 3 Begin En	Group d Begin E pment Para	4Group nd Begin meters	5Grou	up 6Gro	oup 7- in End	-Group Begin	8Gro
Load Asgn Ref 1 2 3 Card Cool	All Coil Loads To Cool Ref 1 3 5	Cooli Equip Sizin	ng ment g	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End	-Group 3 Begin En	Group d Begin E pment Para	4Group nd Begin meters	5Grou	ip 6Gro	oup 7- in End	-Group Begin	8Gro End Begi
Coad Asgn Ref L 2 3 Card Cool Ref	All Coil Loads To Cool Ref 1 3 5	Cooli Equip Sizin	ng ment g 	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End	-Group 3 Begin En Dling Equi	Group d Begin E pment Para	4Group nd Begin metersHEAT REC	5Grou	ip 6Gro	oup 7- in End Seq Order	-Group Begin	8Gro End Begi Demand Limit
Load Asgn Ref L 2 3 Card Cool Ref Vum	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name	Cooli Equip Sizin	ng ment g 	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End Coo DLING Value	-Group 3 Begin En poling Equi rgy Units	Group d Begin E pment Para	4Group nd Begin metersHEAT REC	5Grou	ip 6Gro	oup 7- in End Seq Order Num	-Group Begin Seq Type	8Gro End Begi
Coad Asgn Ref L 2 3 Card Cool Ref Num	All Coil Loads To Cool Ref 1 3 5	Cooli Equip Sizin	ng g Cap Value	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End	-Group 3 Begin En poling Equi rgy Units KW	Group d Begin E pment Para	4Group nd Begin metersHEAT REC	5Grou	ip 6Gro	Seq Order Num	-Group Begin Seq Type PAR	8Gro End Begi Demand Limit
Load Asgn Ref 1 2 3 Card Cool Ref Num 1	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name EQ1001S EQ1001S	Cooli Equip Sizin	ng ment g Cap Value	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End Coo DLING Value 252 277	-Group 3 Begin En poling Equi Units KW KW	Group d Begin E pment Para	4Group nd Begin metersHEAT REC	5Grou	ip 6Gro	Seq Order Num 1	-Group Begin Seq Type PAR PAR	8Gro End Begi Demand Limit
Load Asgn Ref 1 2 3 Card Cool Ref Num 1 2 3	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name EQ1001S	Cooli Equip Sizin	oment reg Cap Value 400 400	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End Coo DLING Value 252 277 7.6	-Group 3 Begin En poling Equi rgy Units KW KW KW	Group d Begin E pment Para	4Group nd Begin metersHEAT REC	5Grou	ip 6Gro	Seq Order Num 1 2	-Group Begin Seq Type PAR PAR PAR	8Gro End Begi Demand Limit
Coad Asgn Ref L Card Cool Ref Wum L 2	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name EQ1001S EQ1001S EQ1307	Cooli Equip Sizin	oment eg Cap Value 400 400 6	-Group 1- Begin End 1 6 7 8 9 9	-Group 2- Begin End Coo DLING Value 252 277	-Group 3 Begin En poling Equi Units KW KW	Group d Begin E pment Para	4Group nd Begin metersHEAT REC	5Grou	ip 6Gro	Seq Order Num 1	-Group Begin Seq Type PAR PAR	8Gro End Begi Demand Limit
Load Asgn Ref 1 2 3 Card Cool Ref Num 1 2 3 4 5	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name EQ1001S EQ1001S EQ1001S EQ1001S EQ1008S	Num Of Units 1 1	oment ag 	-Group 1- Begin End 1 6 7 8 9 9 9COC Cacity	-Group 2- Begin End	-Group 3 Begin En poling Equi Units KW KW KW KW KW KW KW-TON KW	Group d Begin E pment ParaCapac Value	4Group nd Begin metersHEAT REC ity Units	End Begin	np 6Gro	Seq Order Num 1 2	-Group Begin Seq Type PAR PAR PAR	8Gro End Begi Demand Limit
Load Asgn Ref 1 2 3 Card Cool Ref Num 1 2 3 4 5 Card Cool	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name EQ1001S EQ1001S EQ1001S EQ1001S EQ1001SCHILLE	Num Of Units 1 1 1 1 1 1 D WATER	oment eg 	-Group 1- Begin End 1 6 7 8 9 9 9	-Group 2- Begin End	-Group 3 Begin En Dling Equi Units KW KW KW KW-TON KW	Group d Begin E pment ParaCapac Value eferences C or AUX	4Group nd Begin metersHEAT REC ity Units	End Begin	np 6Gro	Seq Order Num 1 2	-Group Begin Seq Type PAR PAR PAR	8Gro End Begi Demand Limit
Load Asgn Ref 1 2 3 Card Cool Ref Num 1 2 3 4 5 Card Cool	All Coil Loads To Cool Ref 1 3 5 62 Equip Code Name EQ1001S EQ1001S EQ1001S EQ1001S EQ1001SCHILLE	Num Of Units 1 1 1 1 1 1 D WATER	ng ment ag ment ag value 400 400 6 90 160	-Group 1- Begin End 1 6 7 8 9 9 9	-Group 2- Begin End	-Group 3 Begin En Dling Equi Units KW KW KW KW-TON KW	Group d Begin E pment ParaCapac Value eferences C or AUX	4Group nd Begin metersHEAT REC ity Units	End Begin	np 6Gro	Seq Order Num 1 2	-Group Begin Seq Type PAR PAR PAR	8Gro End Begi Demand Limit

Card	63			Cooling Pur	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
2	37.3	KW	29.8	KW					4	
4	11.2	KW	11.2	KW					1	
5	18.6	KW	18.6	KW					2	

Card	64			Cooli	ng Equip	ment Optio	ns			
Cool	Max	Load		Free		Cond	Cond	Cond Rej	Cond Rej	Cond Rej
Ref	CM	Shed	Evap	Cooling	Heat	Entering	Min Oper	To Ref	To Ref	@ HW
Num	Reset	Economizer	Precool	Туре	Source	Temp	Temp	Туре	Number	Temp
1	10					85	55			
2	10					85	55			
5	10					85	55			

Card 65				Heating	Load Assign	ment				
Load	All Coil									
Assignment	Loads To	-Group	lGroup 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin E	nd Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1 6								
2	4	7 8								
3	5	9 9								

Card 67					Неа	ting Equip	ment Par	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BLR2MOD	1	18.6	KW	4230	MBH	5500	MBH	1					
2	BLR2MOD	1	18.6	KW	4230	MBH	5500	MBH	2					
3	STEAMBLR	1			3072	MBH	5223	MBH						
4	STEAMBLR	1			761.9	MBH	1050	MBH						
5	BOILERWT	1	2.2	KW	1887	MBH	2500	MBH						

Card 69			Fan Equipm	ent Parame	ters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						

Card 70	ard 70 Fan					ment K	W Over	rides				
		MAIN S	YSTEM-		OTH	ER SYS	TEM	D	ÉMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	20.1											
2	13.0											
3	20.5											
4	29.8											
5	5.6											
6	2.2											
7	3.7											
8	16.8											
9	17.2											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
1	DISTR LOSSES	25.5	TONS	AVAIL	CHILL-LD	1			
2	DISTR LOSSES	10.6	TONS	AVAIL	CHILL-LD	2			
3	DISTR LOSSES	0.2	TONS	AVAIL	CHILL-LD	3			
4	DISTR LOSSES	4.5	TONS	FTSAMCLG	CHILL-LD	4			
5	DISTR LOSSES	7.3	TONS	FTSAMCLG	CHILL-LD	5			
6	DISTR LOSSES	48.5	MBH	AVAIL	HOT-LD	1			
7	DISTR LOSSES	0	MBH	AVAIL	HOT-LD	2			
8	DISTR LOSSES	44	MBH	FTSAMHTG	HOT-LD	3			
9	DISTR LOSSES	13.0	MBH	FTSAMHTG	HOT-LD	4			
10	DISTR LOSSES	12.6	MBH	FTSAMHTG	HOT-LD	5			

Card	i 74			Condenser	/ Coolin	g Tower	Parameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Towe	er Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Туре	Cells	Low Spd	Value	Units
1	EQ5100			11.2	KW	T-WATER	CTOWER	1			

Card 7	4			Condenser	/ Coolin	g Tower Pa	rameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
2	EQ5100			7.46	KW	T-WATER	CTOWER	1	50	4.36	KW
3	EQ5100			18.6	KW	T-WATER	CTOWER	1			
4	EQ5100			18.6	KW	T-WATER	CTOWER	1			

----- Load Section Alternative #3 -----

Card 19- Load Alternative -Number Description

3 ECO H1 - EXISTING BUILDINGS

	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	1001 LIB-EMT	95.5	95.5	8	2	2.54	11.5			
10	10	1001 CLINIC	151.5	152	8	2	2.54	11.5			
15	15	BLDG 1029	196	196	8	2	2.54	12			
20	20	1000 SURGERY	154.5	154.5	8	2	2.54	13.1			
25	25	1000 ANCILLARY	149	149	8	2	2.54	13.1			
30	30	1000 NURSING	265	265.5	8	2	2.54	13.1			
35	35	1000 ADMIN	233.5	234	8	2	2.54	13.1		*	
40	40	1000 DINING	53	53	8	2	2.54	13.1			
45	45	1000 COMPUT RM	26.5	27	8	2	2 54	13 1			

Card 21 Thermostat Parameters										
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH .	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70			LIGHT30	YES
10	78	50	78		70	70			LIGHT30	YES
15	78	50	78		70	70			LIGHT30	YES
20	68	55	68		68	68			HEAVY130	NO
25	72	50	72		72	72			HEAVY130	NO
30	76	50	76		76	76			HEAVY130	NO
35	78	50	78		70	70			HEAVY130	YES
40	78	50	78		70	70			HEAVY130	NO
45	72	50	72		72	72			HEAVY130	NO

Card 22----- Roof Parameters -----Room Roof Equal to Roof Roof Roof Const Roof Roof Roof Number Number Floor? Length Width U-Value Type Direction Tilt Alpha 1 NO 67 21 0.12 12 80 10 NO 90 90 1 0.12 12 80 NO 98 15 1 98 0.12 12 20 95.5 95.5 0.10 12 1 NO 25 1 NO 48.5 49 0.10 12 30 1 NO 123.5 124 0.10 12 35 1 NO 67 67 0.10 12 40 1 NO 28 28.5 0.10 12

Caru 24				Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
5	1	98	11.5	0.11	64	20			
5	2	44	11.5	0.11	64	110			
5	3	98	11.5	0.11	64	200			
5	4	124	11.5	0.11	64	290			
10	1	189	11.5	0.11	64	20			
10	2	597	11.5	0.11	64	110			
10	3	152	11.5	0.11	64	200			
10	4	599	11.5	0.11	64	290			
15	1	213	12	0.18	64	330			
15	2	512	12	0.18	64	60			
15	3	213	12	0.18	64	150			
15	4	918	12	0.18	64	240			
20	1	337	13.1	0.18	64	0			
20	2	231	13.1	0.18	64	90			
20	3	185	13.1	0.18	64	180			
20	4	215	13.1	0.18	64	270			
25	1	308	13.1	0.18	64	0			
25	2	190	13.1	0.18	64	90			
25	3	262	13.1	0.18	64	180			
25	4	203 .	13.1	0.18	64	270			
30	1	1226	13.1	0.18	64	0			
30	2	414	13.1	0.18	64	90			
30	3	1338	13.1	0.18	64	180			
30	4	492	13.1	0.18	64	270			
35	1	531	13.1	0.18	64	0			
35	2	247	13.1	0.18	64	90			
35	3	1065	13.1	0.18	64	180			
35	4	319	13.1	0.18	64	270			
40	1	38	13.1	0.18	64	0			
40	2.	74	13.1	0.18	64	90			
40	3	38	13.1	0.18	64	180			
45	1	40	13.1	0.18	64	0			
45	2	18	13.1	0.18	64	270			

				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading			Visible	Visible
Number	Number	Length	Width	Windows		Coefficient	_	-		Transmittance	
5	1	6.5	3	4	1.1	1		-28-			Norrectunes
5	2	6.5	3	2	1.1	1					
5	3	6.5	3	3	1.1	1					
5	4	6.5	3	7	1.1	1					
10	1	6.5	3	15	1.1	1					
10	2	6.5	3	53	1.1	1					
10	3	6.5	3	10	1.1	1					
10	4	6.5	3	58	1.1	1					
15	1	6.5	3.5	17	1.1	1					
15	2	6.5	3.5	41	1.1	1					
15	3	6.5	3.5	22	1.1	1					
15	4	6.5	3.5	81	1.1	1					
20	1	8	4	33	1.1	0.67					
20	2	8	4	28	1.1	0.67					
20	3	8	4	18	1.1	0.67					
20	4	8	4	18	1.1	0.67					
25	1	8	4	30.5	1.1	0.67					
25	2	8	4	18	1.1	0.67					
25	3	8	4	29	1.1	0.67					
25	4	8	4	16	1.1	0.67					
30	1	8	4	118	1.1	0.67					
30	2	8	4	38	1.1	0.67					
30	3	8	4	158	1.1	0.67					
30	4	8	4	42	1.1	0.67					
35	1	8	4	51	1.1	0.67					
35	2	8	4	22	1.1	0.67					
35	3	8	4	121	1.1	0.67					
35	4	8	4	33	1.1	0.67					
40	1	8	4	4	1.1	0.67					
40	2	8	4	7	1.1	0.67					
40	3	8	4	1	1.1	0.67					
45 45	1 2	8	4 4	4 2	1.1	0.67 0.67					

Card 26				S	chedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHLIB	AVAIL								
10	FSHOFFIC	FSHOFFIC								
15	FSHOFFIC	FSHOFFIC								
20	AVAIL	AVAIL								
25	AVAIL	AVAIL								
30	AVAIL	AVAIL								
35	AVAIL	AVAIL								
40	FSHDINP	FSHDINL								
45	AVAIL	AVAIL								

Card 27					Peopl	e and Ligh	ts				
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Туре	Factor	Ret. Air	Point 1	Point 2
5	12	PEOPLE	250	200	2.1	WATT-SF	ASHRAE2				
10	77	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
15	100	PEOPLE	250	200	2.2	WATT-SF	ASHRAE2				
20	418	SF-PERS	250	200	2.3	WATT-SF	ASHRAE2				
25	418	SF-PERS	250	200	2.5	WATT-SF	ASHRAE2				
30	418	SF-PERS	250	200	1.3	WATT-SF	ASHRAE2				
35	418	SF-PERS	250	200	1.8	WATT-SF	ASHRAE2				
40	418	SF-PERS	250	200	1.2	WATT-SF	ASHRAE2				
45	1	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	OFFICE EQ	1.3	WATT-SF	AVAIL	NONE					
10	1	OFFICE EQ	1.9	WATT-SF	FSHOFFIC	NONE					
15	1	OFFICE EQ	2.3	WATT-SF	FSHOFFIC	NONE					
20	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
25	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
30	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
35	1	HOSPITAL EQ	4.0	WATT-SF	AVAIL	NONE					
40	1	DINING EQ	1	WATT-SF	FSHDINL	NONE					
45	1	COMPUTER RM EQ	4.0	WATT-SF	AVAIL	NONE					

Card 29)- -				- Room Airi	lows				
		Ventil	ation			Infilt	ration			
Room	Cooli	ng	Heati	.ng	Coo	ling	Heat	ing	Reheat	Minimum
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
5	20	CFM-P	20	CFM-P						
10	20	CFM-P	20	CFM-P						
15	20	CFM-P	20	CFM-P						
20	0.307	CFM-SF	0.307	CFM-SF						
25	0.307	CFM-SF	0.307	CFM-SF						
30	0.307	CFM-SF	0.307	CFM-SF						
35	0.307	CFM-SF	0.307	CFM-SF						
40	0.307	CFM-SF	0.307	CFM-SF						
45	0.307	CFM-SF	0.307	CFM-SF						
							9			

Card 31			Part	ition Param	eters -				
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Height	U-Value	Туре	Flag	Temp	Temp	Room No
15	1	459	12	0.29	110	HRLYOADB			

Card 31			Part	ition Param	eters -				
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No
20	1	70	13.1	0.34	110	HRLYOADB			
35	1	70	12	0.18	110	HRLYOADB			

------ System Section Alternative #3 -----

Card 39- System Alternative

FC BPMZ BPMZ BPMZ

Number

Description

3

ECO H - AIRSIDE EQUIPMENT

-----OPTIONAL VENTILATION SYSTEM-----System Ventil Fan Set System Deck Cooling Heating Cooling Heating Static Location SADBVh SADBVh Schedule Schedule Pressure Number Type TRH-AUX 1 2 TRH-AUX TRH-AUX 3 TRH-AUX 4 TRH-AUX 5

Card 40----- System Type -----

Card 41----- Zone Assignment Set Ref #1 Ref #2 Ref #3 Ref #4 Ref #5 Ref #6 Number Begin End Begin End Begin End Begin End Begin End Begin End 1 20 25 30 30 4 35 35 5 40 40 6 45 45 7 5 5 8 10 10 15 15

Card 42	!			Fan	SP an	nd Duct F	arameters	:			
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										
2	1.0										
3	1.0										
4	1.0										
5	1.0										
6	1.0										
7	1.0										
8	1.0										
9	1.0										

Card 43				Airflow D	esign Tem	peratures				
System	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Design
Set	Cooling	Cooling	Heating	Heating	Cooling	Cooling	Preheat	Preheat	Room	Ht Rec
Number	SADB	SADB	SADB	SADB	Lv DB	Lv DB	Lv DB	Lv DB	RH	Diff
1	55.7	55.7								
2	58.1	58.1								
3	58.3	58.3								
4	58.3	58.3								
6	63	63								

Card 4	4					s	ystem Opt	ions					
System	Econ	Econ	Max Pct	Direct	Indirect	1st Stage			Ex	haust Air H	eat Recov	ery	
Set	Type	On	Outside	Evap	Evap	Evap	Fan	Effectiv	eness	Control	Type	Exh-Side	Deck
Number	Flag	Point	Air	Cooling	Cooling	Cooling	Cycling	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2
1	DRY-BULB	65	100										
2	DRY-BULB	65	100										
3 .	DRY-BULB	65	100										
4	DRY-BULB	65	100										

Card 45				Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1										FTSAMHTG
2										FTSAMHTG
3										FTSAMHTG
4										FTSAMHTG
5										FTSAMHTG
7	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
8	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
9	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

ard yste	mMA	IN HEAT	NG	PREHI	EAT	REH	EAT	HUMIDIF	ICATION	AUX HE	ATING	-	
et				Capacity									
umbe	r Value	Uni	its	Value	Units	Value	Units	Value	Units	Value	Units	-	
										48.9	MBH		
:										49.7	MBH		
3										203	MBH		
1										113.0	MBH		
5										6.5	MBH		
			- Equip	oment Sectio	on Altern	ative #3 -							·
ard	59			1	Equipment	Descriptio	on / TOD So	chedules					-
			_	Elec Deman						De	mand Lim	nit	-
	native		_	Time of Day							Tempe	eratur	е
Numbe	er	Schedule	2	Schedule	Max KW	Alternati	ive Descri	otion		Schedul	.e Dr	rift	
3						ECO H1 -	WATERSIDE	EQUIPMENT					
											n End I	ooin.	Pad Boot
Ref L	Cool Re	ef Sizi	ng	Begin End 1 9	Begin End	Begin Er	nd Begin Para	End Begin	End Begin	End Begi			
Ref L Card	Cool Re	ef Sizi	ng	Begin End 1 9	Begin End	Begin Er	nd Begin Para	End Begin ameters	End Begin	End Begi			
Ref L Card Cool Ref Num	Cool Re	ef Sizi	ng Cap Value	Begin End 1 9	Begin End	Begin Er	ipment Para	ameters HEAT REC	End Begin	End Begi	Seq	Seq	 Demand
Ref L Card Cool Ref Num	Cool Re	Num Of Units	 Cap Value 235	Begin End 1 9	Begin End	oling Equi	ipment Para	ameters HEAT REC	End Begin	End Begi	Seq Order	Seq	Demand
Card Cool Ref Num	Cool Re	Num Of Units 1	 Cap Value 235 380	Begin End 1 9	Begin End	oling Equi	ipment Para	ameters HEAT REC	End Begin	End Begi	Seq Order Num 1	Seq Type PAR PAR	Demand
Ref L Card Cool Ref Num	Cool Re	Num Of Units	 Cap Value 235	Begin End 1 9	Begin End	oling Equi	ipment Para	ameters HEAT REC	End Begin	End Begi	Seq Order Num	Seq Type PAR	Demand
Card Cool Ref Num L	Cool Re 1 62 Equip Code Name EQ1008S EQ1001S	Num Of Units 1		Begin End 1 9	Co LINGEne Value 141 260 286	oling Equi	ipment Para 	ametersHEAT REC	End Begin	End Begi	Seq Order Num 1 2	Seq Type PAR PAR	Demand
Card Cool Ref Num 1 2 3	Cool Re	Num Of Units 1 1 1 LED WATE		Begin End 1 9	Co LING Value 141 260 286 Cooling F	oling Equi	ipment Para	ametersHEAT REC city Units	End Begin	End Begi	Seq Order Num 1 2	Seq Type PAR PAR	Demand
Card Cool Ref Num 1 2 3	Cool Re	Num Of Units 1 1 1 CED WATE		Begin End 1 9	Co LING Value 141 260 286 Cooling F	oling Equi	ipment Para	ametersHEAT REC city Units	End Begin	End Begi	Seq Order Num 1 2	Seq Type PAR PAR	Demand
Card Cool Ref Num 1 2 3 Card Cool	Cool Re	Num Of Units 1 1 1 Units Units 1 Units		Begin End 1 9	Co LING Value 141 260 286 Cooling F	oling Equi	ipment Para	ametersHEAT REC city Units Switch	End Begin	End Begi	Seq Order Num 1 2	Seq Type PAR PAR PAR	Demand
Card Cool Ref Num 1 2 3 Card Cool Ref Num 1	Cool Ref	Num Of Units 1 1 1 CED WATE		Begin End 1 9	Pegin End CollingEne Value 141 260 286 Cooling F NSER Full Load	oling Equi	ipment Para	ametersHEAT REC city Units Switch	End Begin COVERYEnerg Value	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand
Card Cool Ref Num Cool Ref Num Ref Num	Cool Re	Num Of Units 1 1 1 Units Units 1 Units		Begin End 1 9	Pegin End Colling Cooling F NSER Full Load Units	oling Equi	ipment Para	ametersHEAT REC city Units Switch	End Begin COVERYEnerg Value	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand
Card Cool Ref Num 1 2 3 Card Cool Ref Num 1 2 2 3	Cool Ref	Num Of Units 1 1 1 Units KW		Begin End 1 9	Pegin End Colling Value 141 260 286 Cooling F NSER Full Load Units KW	oling Equi	ipment Para	ametersHEAT REC city Units Switch	End Begin COVERYEnerg Value	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand
Card Cool Ref Num 1 2 3 Card Cool Ref Num 1 2 2 3	Cool Ref	Num Of Units 1 1 1 Units KW KW		Begin End 1 9	Pegin End Colling Cooling F NSER Full Load Units KW KW	oling Equi	ipment Para	ametersHEAT REC city Units Switch	End Begin COVERYEnerg Value	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand
Ref 1 Card Cool Ref Num 1 2 3 Card I Ref Num 1 2 3	Cool Re 1 62 Equip Code Name EQ1008S EQ1001S 63CHILI Full Lox Value 14.9 37.3 37.3	Num Of Units 1 1 1 LED WATE ad Full Unit KW KW KW		Begin End 1 9	Begin End Co LING Value 141 260 286 Cooling F NSER Full Load Units KW KW KW	oling Equi	ipment Para	ameters HEAT REC Sity Units Switch oad over Contro	End Begin COVERYEnerg Value Cold	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand
Cool Ref Num 1 2 3 Cool Ref Num 1 2 3	Cool Ref. 1 62 Equip Code Name EQ1008S EQ1001S 63	Num Of Units 1 1 1 Units KW KW		Begin End 1 9	Begin End Co LING Value 141 260 286 Cooling F NSER Full Load Units KW KW KW	oling Equi	ipment Para	ameters HEAT REC Sity Units Switch oad over Contro	End Begin COVERYEnerg Value Cold	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand
Card Cool Ref Num 1 2 3 Card 1 2 Card Base	Cool Ref. 1 62 Equip Code Name EQ1008S EQ1001S 63	Num Of Units 1 1 1 Units KW KW KW		Begin End 1 9	Begin End Co LING Value 141 260 286 Cooling F NSER Full Load Units KW KW KW KW Base Hourly	oling Equi	ipment Para	ametersHEAT REC city Units Switch oad over Contro	End Begin COVERYEnerg Value Cold Cold Storage	End Begi	Seq Order Num 1 2 3	Seq Type PAR PAR PAR	Demand

Jtility Wumber	Base Utilit Descri	У		Hourly Demand Value 41.0	Hourly	Schedule Code	Parameters Energy Type CHILL-LD	Equip Refere Number	Dem nce Lim	and iting Er				
Cower T Ref C L E	Cooling		city	Capacity Units	Energy	/ Cooling Energy Consump Units KW KW	y Tower Par Fluid Type T-WATER T-WATER T-WATER	Tower Type CTOWER CTOWER CTOWER	Number Of Cells 1	Percent Airflow Low Spd	Low Spe Energy	d Low Ener	Spd Spd	
'ard 59-	El	ec Cons	sump Day		Equipment nd Demand ay Limit	Descript.	ion / TOD :	Schedule iption	s			mand Lin Tempe		-
oad Al	ll Coil cads To col Ref	Coolir Equip	ng ment B	-Group 1-	-Group 2	Group		p 40	roup 5-	-Group 6	5Gro	up 7-	-Group	8Group End Begin
				co	OLING				RECOVER	Y		Seq		Demand
Cool Equation Co	de me 1009 1001S	Of Units 1 1	-	ecity Units TONS TONS TONS		Units KW KW KW	-	Units		-Energy- ue Un:		Order Num 1 2 3	-	Limit Number

Card 6	3			Cooling F	Pumps and	References					
Cool -	CHILLED	WATER	CONDI	ENSER	HT R	EC or AUX-	s	witch-			
Ref F	ull Load	Full Load	Full Load	Full Load	Full Lo	ad Full I	oad o	ver	Cold	Cooling	Misc.
Num V	<i>l</i> alue	Units	Value	Units	Value	Units	C	ontrol	Storage	Tower	Access.
2 3	37.3	KW	29.8	KW						2	
3 3	37.3	KW	29.8	KM						3	
_ , _				_							
					Utility P	arameters					
Base	Base		Hourly	Hourly			Equip		emand		
	•	У	Demand	Demand	Schedule	Energy	Refer	ence L	imiting	Entering	Leaving
Number	Descri	P	Value	Units	Code	Туре	Numbe	r N	umber	Temp	Temp
1	DISTR	LOSSES	48.1	TONS	FTSAMCLG	CHILL-LD	1				
2	DISTRI	BUTION LOS	41.0	TONS	FTSAMHTG	CHILL-LD	1				
2	DISTRI	BUTION LOS	41.0	TONS	FTSAMHTG	CHILL-LD	1				
2	DISTRI	BUTION LOS	41.0	TONS	FTSAMHTG	CHILL-LD	1				
	74		41.0	Condenser	/ Cooling						
Card 7	74 Cooling			Condenser Energy	/ Cooling	Tower Par	rameter	Numbe	r Perce	nt Low Sp	d Low Spd
Card 7	74 Cooling Tower	Capacity	Capacity	Condenser Energy Consump	/ Cooling Energy Consump	Tower Par Fluid	rameter Tower	Numbe Of	r Percei	nt Low Sp ow Energy	d Low Spd Energy
Card 7 Tower Ref	74 Cooling Tower Code			Condenser Energy Consump Value	/ Cooling Energy Consump Units	Tower Par Fluid Type	ameter Tower Type	Numbe Of Cells	r Percei	nt Low Sp	d Low Spd Energy
Card 7 Tower Ref	74 Cooling Tower Code EQ5100	Capacity	Capacity	Condenser Energy Consump Value 11.2	/ Cooling Energy Consump Units	Tower Par Fluid	rameter Tower	Numbe Of Cells	r Percei	nt Low Sp ow Energy	d Low Spd Energy
Card 7 Tower Ref	74 Cooling Tower Code	Capacity	Capacity	Condenser Energy Consump Value 11.2	/ Cooling Energy Consump Units KW	Tower Par Fluid Type	ameter Tower Type	Numbe Of Cells	r Percei	nt Low Sp ow Energy	d Low Spd Energy

Altern Numbe:	native 1		Day	Elec Demand Time of Day Schedule	y Limit		ive Descr	-	ŒNT		De Schedul	Temp	imit ~ perature Orift	
Load	All Coil	l Cooli	ing											
asgn tef	Loads To		ıg											8Group End Begin E
ard (62				Co	oling Equ	ipment Pa	rameters	}					
col I	Equip	Num		C001						RY		Seq		Demand
lef (lum 1		Of	_	acity Units	Ene Value	rgy	-	acity		Energy		Order	-	Limit
	YSCRW22		235	TONS	146	Units KW	value	Units	va.	lue Ui	nits	Num 1	Type PAR	Number
1	EQ1001S	1	380	TONS	260	KW						2	PAR	
1	EQ1001S	1	380	TONS	286	KW						3	PAR	
ool ·	CHILLE	ED WATER	\	CONDEN	NSER	HT R	EC or AUX	Sw	itch-	Cold	Cooling			
ool def l	CHILLE	ED WATER	Load	CONDE	NSER	HT R	EC or AUX	Sw Load ov	vitch- ver (Cooling		š.	
ef I	CHILLE Full Load Value 14.9 37.3	ED WATER I Full Units KW KW KW	Load	CONDEN Full Load Value 11.2 29.8	NSER Full Load Units KW KW KW Hourly	HT R Full Lo Value Utility P	EC or AUX ad Full : Units	Sw Load ov Co Equip	ritch- rer (mntrol s Der	Cold Storage Storage	Cooling Tower 1 2 3	Misc.		
ool of I	CHILLE Full Load Value 14.9 37.3 37.3 71 Base ty Utili r Descr	ED WATER I Full Units KW KW KW	Load	CONDENT Full Load Value 11.2 29.8 29.8 Hourly Demand	NSER Full Load Units KW KW KW Hourly Demand Units TONS	HT R Full Lo Value Utility P Schedule Code FTSAMCLG	EC or AUX ad Full : Units carameters Energy	Load ov Co	ritch- rer (mntrol s Der	Cold Storage Storage	Cooling Tower 1 2 3	Misc. Access		
ool · ef	CHILLE Full Load Value 14.9 37.3 37.3 71 Base ty Utili r Descr DISTE	ED WATER I Full Units KW KW KW Ety Ety Et LOSSES REUTION	Load	CONDENT Full Load Value 11.2 29.8 29.8 Hourly Demand Value 48.1 41.0	Full Load Units KW KW KW Hourly Demand Units TONS TONS	HT R Full Lo Value Utility P Schedule Code FTSAMCLG FTSAMHTG	EC or AUX ad Full : Units Carameters Energy Type CHILL-LD	Sw Load ov Co Co Equip Refere Number 1	pritch- prer (control s	Cold Storage mand maiting I	Cooling Tower 1 2 3	Misc. Access		
ef 1 in the second of the seco	CHILLE Full Load Value 14.9 37.3 37.3 71 Base ty Utili r Descr DISTE	ED WATER I Full Units KW KW KW Ety Ety Ety Ety Ety Ety Ety Ety Ety Et	Load	CONDEN Full Load Value 11.2 29.8 29.8 Hourly Demand Value 48.1 41.0	Full Load Units KW KW KW Hourly Demand Units TONS TONS	HT R Full Lo Value Utility P Schedule Code FTSAMCLG FTSAMHTG	EC or AUX ad Full : Units arameters Energy Type CHILL-LD CHILL-LD	Equip Refere Number 1	pritch- prer (portrol S p	Cold Storage mand miting I	Cooling Tower 1 2 3 Entering Temp	Misc. Access Leavir Temp	ng r Spd	
ool of lum the second of lum the second of lum the second of lumber second	CHILLE Full Load Value 14.9 37.3 37.3 71 Base ty Utili r Descr DISTE DISTE	ED WATER I Full Units KW KW KW Ety Ety Ety Ety Ety Ety Ety Ety Ety Et	Load	CONDEN Full Load Value 11.2 29.8 29.8 Hourly Demand Value 48.1 41.0	Full Load Units KW KW KW Hourly Demand Units TONS TONS Condenser	HT R Full Lo Value Utility P Schedule Code FTSAMCLG FTSAMHTG / Cooling Energy Consump	EC or AUX ad Full : Units arameters Energy Type CHILL-LD CHILL-LD	Equip Refere Number 1 Tower	per note Lin Number Of	Cold Storage mand siting F sheer 1	Cooling Tower 1 2 3 Entering Temp Low Sperv Energy	Misc. Access Leavir Temp d Low	ng v Spd ergy	
ef 1 in the second of the seco	CHILLE Full Load Value 14.9 37.3 37.3 71 Base ty Utili r Descr DISTE DISTE OCOLING	ED WATER I Full Units KW KW KW Cty Fip LOSSES RIBUTION	Load	CONDENT Full Load Value 11.2 29.8 29.8 Hourly Demand Value 48.1 41.0	Full Load Units KW KW KW Hourly Demand Units TONS TONS Condenser	HT R Full Lo Value Utility P Schedule Code FTSAMCLG FTSAMHTG / Cooling Energy Consump Units	EC or AUX ad Full : Units arameters Energy Type CHILL-LD CHILL-LD	Equip Refere Number 1	Der number Of Cells	Cold Storage mand siting F sheer 1	Cooling Tower 1 2 3 Entering Temp	Misc. Access Leavir Temp	ng v Spd ergy	
ool	CHILLE Full Load Value 14.9 37.3 37.3 71 Base ty Utili r Descr DISTE DISTE OCIONAL Cooling Tower Code	ED WATER I Full Units KW KW KW Cty Fip LOSSES RIBUTION	Load	CONDEN Full Load Value 11.2 29.8 29.8 Hourly Demand Value 48.1 41.0	Full Load Units KW KW KW KW Hourly Demand Units TONS TONS Condenser Energy Consump Value	HT R Full Lo Value Utility P Schedule Code FTSAMCLG FTSAMHTG / Cooling Energy Consump Units KW	EC or AUX ad Full : Units Tarameters Energy Type CHILL-LD CHILL-LD Tower Par	Equip Refere Number 1 1 rameters	Der number Of Cells	Cold Storage mand siting F sheer 1	Cooling Tower 1 2 3 Entering Temp Low Sperv Energy	Misc. Access Leavir Temp d Low	ng v Spd ergy	

------ Equipment Section Alternative #2 ------Card 59----- Equipment Description / TOD Schedules ------Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift ECO H4 - WATERSIDE EQUIPMENT 2 Card 60------ Cooling Load Assignment------Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End 1 9 Card 62------ Cooling Equipment Parameters Order Sea Limit Num Name Units Value Units Value Units Value Units Value Units Num Type Number 1 EDC80TON 1 500 TONS 3284 2 EDC80TON 1 500 TONS 3284 1 MBH MBH 2 PAR Card 63------ Cooling Pumps and References Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold Cooling Misc. Num Value Units Value Units Value Units Ontrol Storage Tower Access. 1 29.8 KW 22.4 KW 1 2 29.8 KW 22.4 KW 2 Card 71------ Base Utility Parameters ------Base Base . Hourly Hourly Equip Demand Utility Utility Demand Demand Schedule Energy Reference Limiting Entering Leaving Number Descrip r Descrip Value Units Code Type Number Number Temp Temp DISTR LOSSES 48.1 TONS FTSAMCLG CHILL-LD 1 DISTRIBUTION LOS 41.0 TONS FTSAMHTG CHILL-LD 1 Card 74------ Condenser / Cooling Tower Parameters ------Energy Energy Number Percent Low Spd Low Spd Cooling Tower Tower Capacity Capacity Consump Consump Fluid Tower Of Airflow Energy Energy Units Type Type Cells Low Spd Value Ref Code Value Units Value Units 18.6 KW T-WATER CTOWER 1
18.6 KW T-WATER CTOWER 1 EQ5100 18.6 EQ5100

Misc Equip

Ref Code

1 E05020 3.7

Value

Energy Energy Sched Equip

KW BWHP1001

Units Code Code

----- Equipment Section Alternative #3 -----Card 59----- Equipment Description / TOD Schedules Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift ECO I - RETROFIT BOILER PLANT Card 65----- Heating Load Assignment Load Assignment Loads To Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Reference Heating Ref Begin End 1 1 9 Card 66----- Optional Heating Coil Assignment -----Assignment Main Preheat Reheat Mech Aux Optional Heating Reference Coil Coil Coil Humidif Coil Ventil Load Card 67----- Pleating Equipment Parameters Heat Equip Number HW Pmp Energy Seq Switch Demand Of Full Ld Ref Code Order over Hot Misc. Cap'y Rate Limit Number Name Units Value Units Value Units Value Units Number Control Strg Acc. Cogen Number BLRFLMOD 1 18.6 KW 4230 MBH 5500 MBH 1 BLRFLMOD 1 18.6 KW 4230 MBH 5500 MBH BLRFLMOD 1 18.6 KW 4230 MBH 5500 MBH STEAMBLR 1 3072 MBH 5223 MBH Card 71----- Base Utility Parameters Base Base Hourly Hourly Equip Demand Utility Utility Demand Demand Schedule Energy Reference Limiting Entering Leaving Number Descrip Value Units Code Type Number Number Temp Temp 1 DISTRIBUTION LOS 59.1 MBH FTSAMHTG HOT-LD 1 DISTRIBUTION LOS 51.0 MBH FTSAMCLG HOT-LD 1 Card 75----- Miscellaneous Accessory #2 #3

Energy Energy Sched

Value Units Code Code

Equip

Energy Energy Sched

Units Code

Value

Utility Description Reference Table

Schedules:

AVAIL AVAILABLE (100%)

DAYSCHED COOLING FAN SCHEDULE CODE

FSHDINL F.S.H. BARRACKS DINING LIGHTING SCHED

FSHDINP F.S.H. BARRACKS DINING PEOPLE SCHED

FSHLIB F.S.H. LIBRARY PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

OPSTART OPTIMUM START COOLING FAN SCHED. CODE

OPSTOP OPTIMUM STOP COOLING FAN SCHED. CODE

System:

BPMZ BYPASS MULTIZONE SYSTEM

FC FAN COIL SYSTEM

TRH-AUX TERMINAL REHEAT SYSTEM WITH AUX HTG

Equipment:

Cooling:

EQ1001S 2-STG CENTRIFUGAL CHILLER <550 TONS

EQ1008S 3-STG CENTRIFUGAL < 300 TONS

EQ1009 3-STG CTV WITH VARIABLE FREQUENCY DRV

EQ1307 PACKAGED TERMINAL AIR CONDITIONER

Heating:

BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE

BOILERWT WATERTUBE BOILER

STEAMBLR STEAM BOILER

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

Schedule Name: AVAIL
Project: AVAILABLE (100)

Location:

Client: VERSION 3.0

Program User: C.D.S. MARKETING
Comments: BUILDING TEMPLATE SERIES

Starting Month: JAN Ending Month: HTG

Hour Util Percent

0 100

Schedule Name: DAYSCHED

Project: COOLING FAN SCHEDULE CODE

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent

0 0 6 100 17 0

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0 12 100 16 0

24

Schedule Name: FSHDINL

Project: F.S.H. BARRACKS DINING LIGHTING

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: LIGHTING SCHEDULE FOR DINING

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

---- -------

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

....

0 0

5 100 19 0

Schedule Name: FSHDINP

Project: F.S.H. BARRACKS DINING PEOPLE S

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.
Comments: PEOPLE SCHEDULE FOR DINING

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

- -	
0	0
6	100
9	0
11	100
14	0
17	100
19	0
24	

Schedule Name: FSHLIB

Project: F.S.H. LIBRARY PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent 0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	15
7	100
17	60
23	15
24	

Schedule Name: FSHOFFIC

Project: F.S.H. OFFICE INTERNAL LOAD SCH Location: F.S.H. SAN ANTONIO, TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC. - JTC, Comments: ALL INTERNAL LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- ---0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
8	100
12	10
13	100
17	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
~ 4	

Schedule Name: FTSAMCLG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH, Program User: HUITT-ZOLLARS, INC.

Comments: CHILLER SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: MAY Ending Month: OCT Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

24

Starting Month: NOV Ending Month: DEC Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FTSAMHTG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH, Program User: HUITT-ZOLLARS, INC.

Comments: BOIELR SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

100 0

24

Starting Month: MAY Ending Month: OCT Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0

24

Starting Month: NOV Ending Month: DEC Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent ----

0

100

Schedule Name: OPSTART

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Οp	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 0

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util	Percent
0		0
6	3	.00
7		0
24		

Schedule Name: OPSTOP

Project: OPTIMUM STOP COOLING FAN SCHED.

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Op	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- 0 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
16	100
17	0
24	

Utility Description Reference Table

Schedules:

AVAIL AVAILABLE (100%)

BWHP1001 SCHEDULE FOR HW PUMP BLDG. 1001

FSHDINL F.S.H. BARRACKS DINING LIGHTING SCHED

FSHDINP F.S.H. BARRACKS DINING PEOPLE SCHED

FSHLIB F.S.H. LIBRARY PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

System:

BPMZ BYPASS MULTIZONE SYSTEM

FC FAN COIL SYSTEM

TRH-AUX TERMINAL REHEAT SYSTEM WITH AUX HTG

Equipment:

Cooling:

EDC80TON ENGINE DRIVEN CHILLER, 80 TONS

EQ1001S 2-STG CENTRIFUGAL CHILLER <550 TONS

YSCRW22 YORK W.C. SCREW CHILLER

Heating:

BLRFLMOD WATERTUBE BOILER WITH FULL MODULATION

STEAMBLR STEAM BOILER

Tower:

EQ5100 COOLING TOWER FANS

Misc:

EQ5020 HEATING WATER CIRCULATION PUMP

03-0185.06 EEAP BOILER-CHILLER STUDY FORT SAM HOUSTON, TEXAS CORPS OF ENGINEERS - FORT WORTH, TEXAS HUITT-ZOLLARS, INC. AREA 1000-BLDGS 1000, 1001, 1029, 1088

Weather File Code:

 Location:
 SAN ANTONIO, TEXAS

 Latitude:
 29.0 (deg)

 Longitude:
 98.0 (deg)

 Time Zone:
 6

 Elevation:
 792 (ft)

 Barometric Pressure:
 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 13:12:11 2/24/96
Dataset Name: FSH1000 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1 EXISTING AIRSIDE EQUIPMENT

System Totals

Percent	Cooling Load			Heatin	ng Load		Cooling	Airflow		Heating Airflow			
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours	
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)		
0 - 5	46.8	31	2,677	-533,097	17	1,472	21,958.3	0	0	0.0	0	0	
5 - 10	93.7	3	276	-1,066,194	37	3,236	43,916.7	0	0	0.0	0	0	
10 - 15	140.5	4	338	-1,599,291	30	2,638	65,875.0	0	0	0.0	0	0	
15 - 20	187.4	2	153	-2,132,387	14	1,245	87,833.4	0	0	0.0	0	0	
20 - 25	234.2	1	122	-2,665,484	2	169	109,791.7	0	0	0.0	0	0	
25 - 30	281.0	0	30	-3,198,581	0	0	131,750.1	0	0	0.0	0	0	
30 - 35	327.9	0	0	-3,731,678	0	0	153,708.4	0	0	0.0	0	0	
35 - 40	374.7	1	90	-4,264,775	0	0	175,666.7	0	0	0.0	0	0	
40 - 45	421.6	6	486	-4,797,872	0	0	197,625.1	0	0	0.0	0	0	
45 - 50	468.4	3	282	-5,330,969	0	0	219,583.4	0	0	0.0	0	0	
50 - 55	515.2	8	698	-5,864,066	0	0	241,541.8	0	0	0.0	0	0	
55 - 60	562.1	5	406	-6,397,163	0	0	263,500.1	0	0	0.0	0	0	
60 - 65	608.9	6	491	-6,930,259	0	0	285,458.4	0	0	0.0	0	0	
65 - 70	655.8	6	559	-7,463,356	0	0	307,416.8	0	0	0.0	0	0	
70 - 75	702.6	9	775	-7,996,454	0	0	329,375.1	0	0	0.0	0	0	
75 - 80	749.4	10	833	-8,529,551	0	0	351,333.5	0	0	0.0	0	0	
80 - 85	796.3	5	416	-9,062,647	0	0	373,291.8	0	0	0.0	0	0	
85 - 90	843.1	1	128	-9,595,744	0	0	395,250.2	Ó	0	0.0	0	0	
90 - 95	890.0	0	0	-10,128,841	0	0	417,208.5	0	0	0.0	0	0	
95 - 100	936.8	0	0	-10,661,938	0	0	439,166.8	100	8,760	0.0	0	0	
Hours Off	0.0	0	0	0	0	0	0.0	0	0	0.0	0	8,760	

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 EXISTING WATERSIDE EQUIPMENT

				Е	QUIP	MENT	ENE	RGY	cons	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	260391	235223	262320	251681	261356	253609	259427	262320	251681	261356	251681	259427	3,070,472
	PK	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	ΓY									
	CHILLD	18972	17136	18972	18360	18972	18360	18972	18972	18360	18972	18360	18972	223,380
	PK	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
2			BA	SE UTILIT	ΓY									
	CHILLD	7886	7123	7886	7632	7886	7632	7886	7886	7632	7886	7632	7886	92,856
	PK	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
3			BA	SE UTILI	гү									
	CHILLD	149	134	149	144	149	144	149	149	144	149	144	149	1,752
	PK	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
4			BA	SE UTILI	ΓY									
	CHILLD	0	0	0	0	3348	3240	3348	3348	3240	3348	0	0	19,872
	PK	0.0	0.0	0.0	0.0	4.5	4.5	4.5	4.5	4.5	4.5	0.0	0.0	4.5

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1 EXISTING WATERSIDE EQUIPMENT

			·	Е (UIP	MENT	ENE	RGY	cons	UMPT:	r o n			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5														
	CHILLD	0	0	0	0	5431	5256	5431	5431	5256	5431	0	0	32,237
	PK	0.0	0.0	0.0	0.0	7.3	7.3	7.3	7.3	7.3	7.3	0.0	0.0	7.3
6		BASE UTILITY												
	HOTLD	361	326	361	349	361	349	361	361	349	361	349	361	4,249
	PK	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
7		BASE UTILITY												
	HOTLD	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8			BASE	UTILITY	ď									
	HOTLD	327	296	327	317	0	0	0	0	0	0	317	327	1,911
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
9 BASE UTILITY														
	HOTLD	97	87	97	94	0	0	0	0	0	0	94	97	565
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
10			BASI	E UTILIT	Y									
	HOTLD	94	85	94	91	0	0	0	0	0	0	91	94	547
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
7	EQ1001S		2-9	ביים כבאייי	PIETICAL.	CHILLED	<550 TON		Equipmen	nt (CHLR-1	.)	-		
-	ELEC	28243	20604	51263	91347	115203		139836	145739	126358	65259	56163	30328	994,677
	PK	90.5	57.9	203.2	208.4	185.3	212.4	223.3	233.8	206.8	213.1	212.1	99.5	233.8
1	EQ5100		COO	LING TOW	ER FANS									
	ELEC	1040	0	6853	12627	13838	13392	13838	13838	13392	9033	7321	1742	106,916
	PK	11.4	2.8	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	13.7	18.6
1	EQ5100		C001	LING TOW	er fans									
	WATER	147	88	343	639	777	817	900	927	827	445	376	165	6,450
	PK	0.7	0.4	1.4	1.4	1.2	1.3	1.4	1.4	1.3	1.5	1.5	0.7	1.5
1	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	TANT VOLU	JME						
	ELEC	27751	25066	27751	26856	27751	26856	27751	27751	26856	27751	26856	27751	326,748
	PK	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3
1	EQ5010		CON	DENSER W	ATER PUN	IP-CV (HIC	H EFFIC.	.)						
	ELEC	22171	20026	22171	21456	22171	21456	22171	22171	21456	22171	21456	22171	261,048
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8

By: HUITT & ZOLLARS

f	Equip -		. 			Mon	thly Con	sumption						
	Code	Jan	Feb	Mar	Apr	May	June	sumption July	Aug	Sep	Oct	Nov	Dec	Tota
		•	102			1147	Cuite	July	Aug	Бер	000	NOV	Dec	100
1	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	744	672	744	720	744	720	744	744	720	744	720	744	8,76
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1
							Bldg. 1	000 CHW	Equipmen	t (CHLR-2))			
2	EQ1001S		2-:	STG CENT	RIFUGAL	CHILLER	<550 TON	S						
	ELEC	0	0	32337	66125	126629	136665	153706	160194	138890	50680	32553	0	897,7
	PK	0.0	0.0	120.6	163.1	203.7	233.5	245.4	256.9	227.3	146.9	127.9	0.0	256
2	EQ5100		C00	LING TOW	er fans									
	ELEC	0	0	5062	8370	13838	13392	13838	13838	13392	7169	4978	0	93,8
	PK	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	0.0	18
2	EQ5100			LING TOW										
	WATER	0	0	219	427	787	828	912	940	838	336	219	0	5,5
	PK	0.0	0.0	0.8	1.0	1.2	1.3	1.4	1.4	1.3	1.0	0.9	0.0	1
_	F05.001													
2	EQ5001	•		LLED WATI			ANT VOLU							
	ELEC PK	0.0	0.0	37.3	16785	27751	26856	27751	27751	26856	14510	10071	0	188,7
	PK	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	0.0	37
2	EQ5010		CON	DENGED W	אוום סייה	ים ביינו נשדה	H EFFIC.	١						
_	ELEC	0	0	8314	13410	22171	21456	22171	22171	21456	11592	8046	0	150,7
	PK	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	0.0	29
				L					23.0			27.0	0.0	2.7
2	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	0	0	279	450	744	720	744	744	720	389	270	0	5,0
	PK	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1
							Bldg.	1001 Win	dow Units					
3	EQ1307		PAC	KAGED TE	RMINAL A	IR CONDI	-							
	ELEC	160	144	160	156	1626	1706	1972	1989	1502	894	155	160	10,6
	PK	6.4	6.4	6.4	6.7	7.2	7.5	7.7	7.7	7.2	6.7	6.4	6.4	7
3	EQ5215	•	CON	DENSER F.	ANS-HEAT	PUMP								
	ELEC	11	9	15	18	216	231	303	270	206	108	14	11	1,4
	PK	0.0	0.0	0.0	0.0	0.7	0.8	1.0	1.0	0.7	0.6	0.0	0.0	1
3	EQ5308			TROLS										
	ELEC	74	67	74	72	74	72	74	74	72	74	72	74	8
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0
							_	. 1001 CH	W Equipm	ent				
4	EQ1001S						<550 TON							
	ELEC	0	0	0	0	20371	20908	23463	23990	19625	12976	0	0	121,3
	PK	0.0	0.0	0.0	0.0	60.1	61.2	63.8	63.9	57.6	40.6	0.0	0.0	63

				E Q	UIPN	ENT	ENEI	RGY (const	лметі	ON			
Ref	Equip					Mont	hly Con	sumption						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
4	EQ5100		COOL	ING TOWER	FANS									
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	4479	0	0	45,605
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
4	EQ5100		COOL	ING TOWER	FANS									
	WATER	0	0	0	0	88	90	101	103	82	51	0	0	514
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.3
4	EQ5001		CHIL	LED WATER	. מאוזם	CONST	ANT VOLU	ME						
•	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	40.450
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
	***	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
4	EQ5010		CONDI	ENSER WAT	ER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	49,459
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
4	EQ5300		CONT	ROL PANEI	. & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
						<u> </u>	Bldg.	1029 CHW	/ Equipmen	nt				
5	EQ1008S		3-ST	G CENTRIE	FUGAL <	300 TON	s							
	ELEC	0	0	0	0	17985	20283	22759	23700	19340	11061	0	0	115,128
	PK	0.0	0.0	0.0	0.0	62.2	62.7	65.8	68.1	64.7	49.6	0.0	0.0	68.1
5	EQ5100		COOL	ING TOWER	RFANS									
	ELEC	0	0	0	0	5550	5371	5550	5550	5371	2643	0	0	30,036
	PK	0.0	0.0	0.0	0.0	7.5	7.5	7.5	7.5	7.5	7.5	0.0	0.0	7.5
5	EQ5100		COOL	ING TOWER	RFANS									
	WATER	0	0	0	0	103	117	131	136	108	66	0	0	660
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
5	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13838	13392	13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
5	EQ5010		COND	ENSER WA	אוום סיוי	ם_רעו/עורם	U PPP1C	,						
_	ELEC	0	0	O O	0	13838	13392	, 13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
												- • •	- · ·	
5	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

ef	Equip					Mon	thly Con	sumption						
ım	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	m ·
					• "			-	-	Sep	000	NOV	Dec	Tot
1	TYPFAN		GEN	ERIC FAN			Diug.	1000 Airsio	ie rans					
	ELEC	14954	13507	14954	14472	14954	14472	14954	14954	14472	14954	14472	14954	176,0
	PK	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20
2	TYPFAN		CENT	ERIC FAN										
	ELEC	9672	8736	9672	9360	9672	9360	0.672	0670					
	PK	13.0	13.0	13.0	13.0	13.0	13.0	9672	9672	9360	9672	9360	9672	113,8
		<u> </u>						13.0	13.0	13.0	13.0	13.0	13.0	13
3	TYPFAN		GEN	ERIC FAN										
	ELEC	15252	13776	15252	14760	15252	14760	15252	15252	14760	15252	14760	15252	179,5
	PK	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20
			-											
4	TYPFAN			ERIC FAN										
	ELEC	22171	20026	22171	21456	22171	21456	22171	22171	21456	22171	21456	22171	261,0
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	2
5	TYPFAN		GEN	ERIC FAN										
	ELEC	4166	3763	4166	4032	4166	4032	4166	4166	4032	4166	4032	4166	49,0
	PK	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	43,0
6	TYPFAN			ERIC FAN										
	ELEC PK	1637	1478	1637	1584	1637	1584	1637	1637	1584	1637	1584	1637	19,2
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2
7	TYPFAN		GENI	ERIC FAN			Bldg.	1001 Airsi	de Fans					
	ELEC	2753	2486	2753	2664	2753	2664	2753	2753	2664	2753	2664	2753	72.4
	PK	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	32,4
								·				····		•
8	TYPFAN		GEN	ERIC FAN										
	ELEC	12499	11290	12499	12096	12499	12096	12499	12499	12096	12499	12096	12499	147,1
	PK	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16
9	TYPFAN		CENT	TOTO DAN			Bldg. 1	029 Airsid	e Fans					
-	ELEC	12797	11558	ERIC FAN 12797	12384	12797	12204	10707	10707					
	PK	17.2	17.2	17.2	17.2	17.2	12384	12797	12797	12384	12797	12384	12797	150,6
								000 HW E		17.2	17.2	17.2	17.2	17
1	BLR2MOD		WATI	ERTUBE BO	DILER WI	TH HIGH-		000 11 44 Et	in finen				•	
	GAS	12407	11610	9573	7345	8523	6909	6024	6070	7259	10763	9223	12384	108,0
	PK	22.2	22.8	18.3	15.5	16.7	14.8	13.5	13.6	15.4	20.9	18.3	22.1	22
														
1	EQ5020		HEAT	ring wate	R CIRCU	LATION PO	JMP							_
	ELEC	13838	12499	12020	12202	12020	12200			12200				162.0
	ELEC	13030	12433	13838	13392	13838	13392	13838	13838	13392	13838	13392	13838	162,9

				E Q	UIPM	ENT	ENER	GY C	ONSU	мрті	o n			
Ref	Equip -	·				Mont	hlv Cons	umption .						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5311		BOIL	ER CONTRO	OLS									
	ELEC	93	84	93	90	93	90	93	93	90	93	90	93	1,095
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	BLR2MOD		WATE	RTUBE BO	ILER WITH	HIGH-L	OW FIRE							
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	EQ5311		BOIL	ER CONTR	OLS					•				
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3			STEA	M BOILER			Bldg. 1	000 LPS E	quipment					
	GAS	4453	4022	4424	4263	0	0	0	0	0	0	4000		
	PK	6.3	6.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	4291 6.0	4454 6.0	25,906 6.3
3	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
4							Bldg. 1	001 LPS E	quipment			-	-	
4	GAS	20.		M BOILER		_								
	PK	301 2.2	254 2.4	133 0.4	129 0.4	0.0	0	0	0	0	0	129	279	1,225
	FR	2.2	2.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.2	2.4
4	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	52	47	47	45	0	0	0	0	0	0	45	53	288
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
5							Bldg. l	029 HW E	quipment					
5	GAS	336	299	RTUBE BO		•		_						
	PK	3.2	3.4	124 0.5	120 0.5	0 0.0	0.0	0.0	0.0	0	0	120	302	1,301
	•	3.2	3.4	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.3	3.4
5	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	669	592	546	528	0	0	0	0	0	0	528	658	3,520
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
5	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	38	34	31	30	0	0	0	0	0	0	30	37	200
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

03-0185.06 EEAP BOILER-CHILLER STUDY FORT SAM HOUSTON, TEXAS CORPS OF ENGINEERS - FORT WORTH, TEXAS HUITT-ZOLLARS, INC. AREA 1000-BLDGS 1000, 1001, 1029, 1088

Weather File Code:

Location: SAN ANTONIO, TEXAS
Latitude: 29.0 (deg)
Longitude: 98.0 (deg)
Time Zone: 6
Elevation: 792 (ft)
Barometric Pressure: 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

 Air Density:
 0.0738 (Lbm/cuft)

 Air Specific Heat:
 0.2444 (Btu/lbm/F)

Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 13:51: 1 2/24/96

Dataset Name: FSH1000 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 2 ECO G-INSTALL EMS AIRSIDE SYSTEMS

System Totals

Percent	Cool	ling Loa	.d	Heati	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	46.8	31	2,677	-561,327	18	1,563	21,913.6	0	0	0.0	0	0
5 - 10	93.6	3	276	-1,122,654	40	3,507	43,827.1	0	0	0.0	0	0
10 - 15	140.4	4	338	-1,683,982	30	2,589	65,740.7	0	0	0.0	0	0
15 - 20	187.2	2	153	-2,245,309	12	1,024	87,654.3	0	0	0.0	0	0
20 - 25	234.1	1	122	-2,806,636	1	57	109,567.8	0	0	0.0	0	0
25 - 30	280.9	0	30	-3,367,963	0	20	131,481.5	0	0	0.0	0	0
30 - 35	327.7	0	0	-3,929,291	0	0	153,395.0	0	0	0.0	0	0
35 - 40	374.5	1	104	-4,490,618	0	0	175,308.6	0	0	0.0	0	0
40 - 45	421.3	6	495	-5,051,946	0	0	197,222.2	0	0	0.0	0	0
45 - 50	468.1	3	304	-5,613,273	0	0	219,135.7	0	0	0.0	0	0
50 - 55	514.9	8	696	-6,174,600	0	0	241,049.3	0	0	0.0	0	0
55 - 60	561.7	4	348	-6,735,927	0	0	262,962.9	0	0	0.0	0	0
60 - 65	608.6	7	609	-7,297,254	0	0	284,876.4	0	0	0.0	0	0
65 - 70	655.4	8	693	-7,858,582	0	0	306,790.1	0	0	0.0	0	0
70 - 75	702.2	8	719	-8,419,909	0	0	328,703.6	66	5,762	0.0	0	0
75 - 80	749.0	5	441	-8,981,236	0	0	350,617.2	0	12	0.0	0	0
80 - 85	795.8	5	438	-9,542,563	0	0	372,530.8	0	29	0.0	0	0
85 - 90	842.6	3	225	-10,103,891	0	0	394,444.3	0	30	0.0	0	0
90 - 95	889.4	1	92	-10,665,218	0	0	416,357.9	0	16	0.0	0	0
95 - 100	936.2	0	0	-11,226,546	0	0	438,271.5	33	2,911	0.0	0	0
Hours Off	0.0	0	0	0	0	0	0.0	0	0	0.0	0	8,760

				E	QUIP	MENT	E N E	RGY	cons	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	260391	235223	262320	251681	261356	253609	259427	262320	251681	261356	251681	259427	3,070,472
	PK	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
, 5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1				E UTILIT										
	CHILLD	18972	17136	18972	18360	18972	18360	18972	18972	18360	18972	18360	18972	223,380
	PK	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
2				E UTILIT										
	CHILLD	7886	7123	7886	7632	7886	7632	7886	7886	7632	7886	7632	7886	92,856
	PK	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
3				SE UTILIT										
	CHILLD	149	134	149	144	149	144	149	149		149	144	149	1,752
	PK	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
4			BAS	SE UTILIT	Ϋ́									
	CHILLD	0	0	0	0	3348	3240	3348	3348	3240	3348	0	0	19,872
	PK	0.0	0.0	0.0	0.0	4.5	4.5	4.5	4.5	4.5	4.5	0.0	0.0	4.5

											L U N			
ef	Equip					Mon	thly Con	sumption						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
5			BASI	E UTILITY	r.									
	CHILLD	0	0	0	0	5431	5256	5431	5431	5256	5431	0	0	32,23
	PK	0.0	0.0	0.0	0.0	7.3	7.3	7.3	7.3	7.3	7.3	0.0	0.0	7.
6			BASI	E UTILITY	C .									
	HOTLD	361	326	361	349	361	349	361	361	349	361	349	361	4,24
	PK	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.
7			BAS	E UTILITY	ť									
	HOTLD	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
8			BAS	E UTILITY	ž.									
	HOTLD	327	296	327	317	0	0	0	0	0	0	317	327	1,9
	PK	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0
9			BAS	E UTILITY	ď									
	HOTLD	97	87	97	94	0	0	0	0	0	0	94	97	5
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0
0			BAS	E UTILIT	Y									
	HOTLD	94	85	94	91	0	0	0	0	0	0	91	94	5
	PK	0.1	0.1	0.1	0.1	0.0	0.0 Bldg	0.0 1000 CHV	0.0 V Fauinme	0.0 ent (CHLR-	0.0	0.1	0.1	0
1	EQ1001S		2-	STG CENT	RIFUGAL	CHILLER	_		· zqu.p	m (OILLI	•)			
	ELEC	25009	18278	47678	87811	111919	121500	137257	143390	123559	61679	52909	26836	957,8
	PK	79.7	51.2	202.4	207.6	181.6	209.9	221.3	232.3	204.0	213.1	212.0	89.7	232
1	EQ5100		C00	LING TOW	ER FANS									
	ELEC	8903	6738	12690	13392	13838	13392	13838	13838	13392	13838	12952	9470	146,2
	PK	18.6	17.7	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18
1	EQ5100	-		LING TOW										
	WATER	144	86	339	635	774	814	897	925	824	442	373	162	6,4
	PK	0.6	0.3	1.4	1.4	1.2	1.3	1.4	1.4	1.3	1.5	1.5	0.7	1
1	EQ5001			LLED WAT			TANT VOLU	JME						-
	ELEC	27751	25066	27751	26856	27751	26856	27751	27751	26856	27751	26856	27751	326,7
	PK	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37
1	EQ5010			DENSER W			GH EFFIC	.)						
	ELEC	22171	20026	22171	21456	22171	21456	22171	22171	21456	22171	21456	22171	261,0
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip													
Num	Code	Jan	Feb	Mar	Apr	Mor May								
			200	Hat	PDI	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5300		CON	TROL PAN	EL & INT	TERLOCKS								
	ELEC	744	672	744	720	744	720	744	744	720	744	720		
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	720	744	8,760
						*	Bldg.			ent (CHLR-		1.0	1.0	1.0
2	EQ1001S		2-	STG CENT	RIFUGAL	CHILLER	<550 TON	IS	-4	on (onen	-,			
	ELEC	0	0	30725	63733	123019	133551	150870	157613	135814	48549	31059	0	874,932
	PK	0.0	0.0	115.2	158.0	199.6	230.7	243.3	255.4	224.3	141.6	122.4	0.0	255.4
_														
2	EQ5100			LING TOW	ER FANS									
	ELEC PK	0	0	5189	8370	13838	13392	13838	13838	13392	7235	5022	0	94,116
	PK	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	0.0	18.6
2	EQ5100		COO	LING TOW	7D 173370									
_	WATER	0	0	218	425	704	225							
	PK	0.0	0.0	0.8	1.0	784 1.2	825 1.3	910	937	835	334	218	0	5,486
				•••	1.0	1.2	1.3	1.4	1.4	1.3	0.9	0.8	0.0	1.4
2	EQ5001		CHI	LLED WATE	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	10407	16785	27751	26856	27751	27751	26856	14510	10071	0	100 000
	PK	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	0.0	188,738 37.3
													0.0	37.3
2	EQ5010		CONI	DENSER WA	ATER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	8314	13410	22171	21456	22171	22171	21456	11592	8046	0	150,788
	PK	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	0.0	29.8
2	EQ5300		CONT	DOI DAN										
_	ELEC	0	0	TROL PANE 279	ال کے دات 450		500							
	PK	0.0	0.0	1.0	1.0	1.0	1.0	1.0	744	720	389	270	0	5,060
				L					1.0	1.0	1.0	1.0	0.0	1.0
3	EQ1307		PACE	CAGED TER	MINAL A	IR CONDI		1001 Wind	low Units					
	ELEC	160	144	160	156	1559	1675	1812	1915	1486	587	155	160	0.000
	PK	6.4	6.4	6.4	6.7	7.2	7.5	7.7	7.7	7.2	6.7	6.4	6.4	9,968
													<u> </u>	7.7
3	EQ5215	•	CONE	ENSER FA	NS-HEAT	PUMP								
	ELEC	11	9	15	18	202	225	295	262	201	75	14	11	1,338
	PK	0.0	0.0	0.0	0.0	0.8	0.8	1.0	1.0	0.8	0.6	0.0	0.0	1.0
2	EQ5308													
	ELEC	74		ROLS										
	PK	0.1	0.1	0.1	72	74	72	74	74	72	74	72	74	876
		U.1.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4	EQ1001S		2-9	TG CENTR	IFIIGAT.	- פשונוויי	Bldg.	1001 CHW	Equipmen	nt				
	ELEC	0	0	0	0	20905	21885	23480	24825	20544	677.0	_		
	PK	0.0	0.0	0.0	0.0	63.7	63.1	64.6	65.5	63.3	6719 40.5	0	0	118,358
						<u> </u>				VJ.J	40.5	0.0	0.0	65.5

				E Q	UIPI	MENT	ENE	RGY (CONS	UMPTI	ON			
Pef	Equip					Mont	-hlu Con							
	Code	Jan	Feb	Mar	Apr	Moni May	June	July	Aug	Sep	Oct	Nov	Dec	Total
4	EQ5100		COOT	ING TOWE	D DAMC									
*	ELEC	0	0	0	0	8333	8064	8333	8333	8064	3765	0	0	44 801
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
												0.0	0.0	11.2
4	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	86	90	95	101	82	27	0	0	482
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.3
4	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	4010	0	0	45,136
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
						VIII - 1					·			
4	EQ5010		COND		TER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	4010	0	0	45,136
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
4	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	358	0	0	4,030
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
								1029 CHW	Equipmer Equipmer	nt				
5	EQ1008S					300 TON	-							· · · · · · · · · · · · · · · · · · ·
	ELEC	0	0	0	0	16880	17902	19329	21187	16948	7340	0	0	99,585
	PK	0.0	0.0	0.0	0.0	65.9	67.0	69.1	70.1	67.9	47.3	0.0	0.0	70.1
5	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	5550	5371	5550	5550	5371	5550	0	0	32,943
	PK	0.0	0.0	0.0	0.0	7.5	7.5	7.5	7.5	7.5	7.5	0.0	0.0	7.5
5	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	109	115	121	133	106	44	0	0	628
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.5	0.4	0.4	0.0	0.0	0.5
5	EQ5001	•	CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13838	13392	13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
5	EQ5010		COND	ENSER WA	TER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	13838	13392	13838	13838	13392	13838	0	0	82,138
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
5	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
						-								

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption	*****					
Num	Cođe	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
							Bldg.	1000 Airsi	de Fans					
1	TYPFAN			ERIC FAN										
	ELEC	14954	13507	14954	14472	14954	14472	14954	14954	14472	14954	14472	14954	176,076
	PK	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
2	TYPFAN		GEN	ERIC FAN										
	ELEC	9672	8736	9672	9360	9672	9360	9672	9672	9360	9672	9360	9672	113,880
	PK	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
													······································	
3	TYPFAN			ERIC FAN										
	ELEC	15252	13776	15252	14760	15252	14760	15252	15252	14760	15252	14760	15252	179,580
	PK	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
4	TYPFAN		GENI	ERIC FAN										
_	ELEC	22171	20026	22171	21456	22171	21456	22171	22171	21456	22171	21456	22171	261,048
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
			· · ·											
5	TYPFAN		GENI	ERIC FAN										
	ELEC	4166	3763	4166	4032	4166	4032	4166	4166	4032	4166	4032	4166	49,056
	PK	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
6	TYPFAN		GENI	ERIC FAN										
•	ELEC	1637	1478	1637	1584	1637	1584	1637	1637	1584	1637	1584	1637	19,272
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2,2	2.2	2.2	2,2	2.2	2.2
							Bldg.	1001 Airsi	de Fans					
7	TYPFAN		GEN	ERIC FAN										
	ELEC	2753	2486	2753	2664	2753	2664	2753	2753	2664	2753	2664	2753	32,412
	PK	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
8	TYPFAN		GEN	ERIC FAN										
Ū	ELEC	3883	3502	4358	4325	4234	4275	4338	4711	3965	4030	4053	3782	10.457
	PK	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	49,457 16.8
		•					Bldg.	1029 Airsi	 -					20.0
9	TYPFAN		GEN	ERIC FAN										
	ELEC	3967	3583	4628	4403	4334	4276	4411	4793	4059	4226	4386	3867	50,933
	PK	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
	DI ROMOD		***				-	000 HW E	quipment					
1	BLR2MOD GAS	12407	WAT1	ERTUBE BO		TH HIGH-		6004		20				
	PK	22.2	22.8	18.3	7345 15.5	8523 16.7	6909 14.8	6024 13.5	6070	7259	10763	9223	12384	108,090
					-5.5	10.7	74.0	5	13.6	15.4	20.9	18.3	22.1	22.8
1	EQ5020		HEAT	TING WAT	ER CIRCU	LATION P	UMP							
	ELEC	13838	12499	13838	13392	13838	13392	13838	13838	13392	13838	13392	13838	162,936
	PK	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6

0.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO G-INSTALL EMS WATERSIDE SYSTEMS

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Feb Mar Apr Jan May June July Aug Sep Oct. Nov Dec Total BOILER CONTROLS 1 EQ5311 1,095 93 90 93 90 ELEC 93 90 93 93 84 93 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 PK 0.1 0.1 0.1 2 BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 EQ5020 HEATING WATER CIRCULATION PUMP ELEC n 0 0 0 0 0 0 0 0 0 0 0 0 Þĸ 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 EQ5311 BOILER CONTROLS ELEC 0 0 0 0 0 0 ٥ 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Bldg. 1000 LPS Equipment STEAM BOILER GAS 4453 4022 4424 4263 0 0 0 0 0 0 4291 4454 25,906 PK 6.3 6.0 6.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 6.0 6.0 6.3 . 3 EQ5311 BOILER CONTROLS ELEC 93 84 93 90 0 0 0 0 0 0 543 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 Bldg. 1001 LPS Equipment STEAM BOILER GAS 376 326 133 129 0 0 0 0 0 0 137 385 1,486 PK 6.6 6.6 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 6.6 6.6 4 EQ5311 BOILER CONTROLS ELEC 45 47 49 45 0 0 0 0 0 0 45 281 50 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 Bldg. 1029 HW Equipment 5 WATERTUBE BOILER GAS 487 545 138 120 0 0 0 0 0 0 138 554 1,983 PK 11.5 11.5 2.9 0.5 0.0 0.0 0.0 0.0 0.0 0.0 11.5 3.6 11.5 5 E05020 HEATING WATER CIRCULATION PUMP ELEC 607 0 0 0 0 0 0 537 607 3,379 PK 2.2 2.2 2.2 0.0 0.0 0.0 0.0 0.0 0.0 2.2 2.2 2.2 5 EQ5311 BOILER CONTROLS ELEC 35 31 32 30 0 0 0 0 0 0 35 192 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO H1 - WATERSIDE EQUIPMENT

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mor	thly Cor	sumption	1					
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	260391	235223	262320	251681	261356	253609	259427	262320	251681	261356	251681	259427	3,070,472
	PK	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													•
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	. 0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1				E UTILIT										
	CHILLD	0	0	0	0	35786	34632	35786	35786	34632	35786	0	0	212,410
	PK	0.0	0.0	0.0	0.0	48.1	48.1	48.1	48.1	48.1	48.1	0.0	0.0	48.1
2		-		E UTILIT										
	CHILLD	30504	27552	30504	29520	0	0	0	0	0	0	29520	30504	178,104
	PK	41.0	41.0	41.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	41.0	41.0
1	EQ1008S			TG CENTE	RIFUGAL	< 300 TO	NS							
	ELEC	26320	19086	40037	63088	69782	69122	70663	73696	71260		40256	28374	627,525
	PK	86.9	49.8	112.4	113.9	122.7	122.2	126.1	131.7	128.0	119.5	96.7	100.5	131.7
1	EQ5100			LING TO	ver fans									
	ELEC	1574	352	4735	7903	8333	8064	8333		8064	6613	5108	2057	69,469
	PK	10.2	6.4	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3
ECO H1 - WATERSIDE EQUIPMENT

				E	QUIP	M E N T	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mor	thlu Cor	scumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		C001	LING TOW	ER FANS									
	WATER	183	120	301	469	496	480	484	498	491	417	303	201	4,441
	PK	0.7	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.7	0.8	0.9
1	EQ5001		CHI	LLED WAT	ER PUMP	- CONSI	ANT VOLU	JME						
	ELEC	11086	10013	11086	10728	11086	10728	11086	11086	10728	11086	10728	11086	130,524
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
1	EQ5010		CON	DENSER W.	ATER PUN	MP-CV(HIC	H EFFIC.	.)						
	ELEC	8333	7526	8333	8064	8333	8064	8333	8333	8064	8333	8064	8333	98,112
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
1	EQ5300		CON	TROL PAN	EL & INT	TERLOCKS								
	ELEC	744	672	744	720	744	720	744	744	720	744	720	744	8,760
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	EQ1001S		2-5	STG CENT	RIFUGAL	CHILLER	<550 TO	1S						
	ELEC	0	0	44058	99951	131539	129643	132048	137385	133483	73816	48831	0	930,753
	PK	0.0	0.0	155.3	214.3	230.7	229.5	233.2	242.9	240.1	226.7	165.3	0.0	242.9
2	EQ5100		C001	LING TOW	ER FANS									
	ELEC	0	0	5641	10512	13838	13392	13838	13838	13392	7496	6092	0	98,040
	PK	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	0.0	18.6
2	EQ5100		C00	LING TOW	ER FANS									
	WATER	0	0	298	637	819	792	799	822	811	478	328	0	5,784
	PK	0.0	0.0	1.0	1.3	1.4	1.4	1.3	1.4	1.4	1.4	1.1	0.0	1.4
2	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	TANT VOL	JME						
	ELEC	0	0	11563	21261	27751	26856	27751	27751	26856	15032	12309	0	197,130
	PK	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	0.0	37.3
2	EQ5010		CON	DENSER W	ATER PU	MP-CV(HIC	SH EFFIC.	.)						
	ELEC	0	0	9238	16986	22171	21456	22171	22171	21456	12009	9834	0	157,493
	PK	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	0.0	29.8
2	EQ5300		CON	TROL PAN	EL & IN	rerlocks								
	ELEC	0	0	310	570	744	720	744	744	720	403	330	0	5,285
	PK	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0
3	EQ1001S		2-	STG CENT	RIFUGAL	CHILLER	<550 TO	1 S						
	ELEC	0	0	0	0	84940	110638	145249	151120	106423	6520	0	0	604,890
	PK	0.0	0.0	0.0	0.0	214.7	228.3	256.6	267.2	238.0	161.1	0.0	0.0	267.2

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3
ECO H1 - WATERSIDE EQUIPMENT

				E Q	UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	8891	11011	13838	13838	10416	818	0	0	58,813
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
3 .	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	486	625	811	834	598	40	0	0	3,393
	PK	0.0	0.0	0.0	0.0	1.2	1.3	1.4	1.4	1.3	1.0	0.0	0.0	1.4
3	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	17829	22082	27751	27751	20888	1641	0	0	117,943
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
3	EQ5010		COND	ENSER WA	TER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	14244	17642	22171	22171	16688	1311	0	0	94,228
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
3	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	478	592	744	744	560	44	0	0	3,162
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4
ECO H2 - WATERSIDE EQUIPMENT

				Е	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS	260301	225222	262222	051601	061056	0-0400							
	ELEC PK	443.2	235223	262320 443.2	251681 443.2	261356 443.2	253609 443.2	259427 443.2	262320 443.2	251681 443.2	261356 443.2	251681 443.2		3,070,472
	r.K	443.2	443.2	113.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
J	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
													• • • • • • • • • • • • • • • • • • • •	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
_														
5	MISC LD		•		•			_	_	_				
	P HOTH20 PK	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
	FK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1				E UTILIT										
	CHILLD	0	0	0	0	35786	34632	35786	35786	34632	35786	0	0	212,410
	PK	0.0	0.0	0.0	0.0	48.1	48.1	48.1	48.1	48.1	48.1	0.0	0.0	48.1
2			BAS	E UTILIT	v									
-	CHILLD	30504	27552	30504	29520	0	0	0	0	0	0	29520	30504	178,104
	PK	41.0	41.0	41.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	41.0	41.0
											-	12.0	12.0	11.0
1	EQ1009		3-5	STG CTV W	ITH VARI	ABLE FRE	QUENCY I	DRV						
	ELEC	26119	17409	43074	67742	71287	68749	67481	69770	70879	61365	42890	28742	635,507
	PK	102.9	53.7	139.4	120.3	135.0	134.5	121.0	126.9	141.0	140.7	111.7	120.9	141.0
1	EQ5100			LING TOW										
	ELEC	1044	137	1644	2697	3315	3803	4490	5085	4112	2489	1562	1185	31,563
	PK	8.0	3.9	8.6	6.5	6.8	8.1	9.8	10.5	8.7	7.9	7.1	8.3	10.5

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4
ECO H2 - WATERSIDE EQUIPMENT

	Equip					Mor	thly Co-	oumn+i						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
										•				10,
1	EQ5100			LING TOW										
	WATER	182	119	304	473	497	480	481	494	491	422	305	201	4,4
	PK	0.7	0.4	0.9	0.8	0.9	0.9	0.8	0.8	0.9	0.9	0.8	0.8	(
1	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	JME						
	ELEC	11086	10013	11086	10728	11086	10728	11086	11086	10728	11086	10728	11086	130,5
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14
	EQ5010		CON	DENSER W	אווס פפדב	IP-CV/HTG	SH EFFIC.	,						
	ELEC	8333	7526	8333	8064	8333	8064	8333	8333	8064	8333	0064	0000	
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	8064 11.2	8333 11.2	98, 1
														-
	EQ5300 ELEC	744	CON 672	TROL PAN	EL & INT 720		700	244						
	PK	1.0	1.0	1.0	1.0	744	720	744	744	720	744	720	744	8,
	FR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	EQ1001S		2-8	STG CENT	RIFUGAL	CHILLER	<550 TON	IS						
	ELEC	0	0	44058	99951	131539	129643	132048	137385	133483	73816	48831	0	930,
	PK	0.0	0.0	155.3	214.3	230.7	229.5	233.2	242.9	240.1	226.7	165.3	0.0	24
	EQ5100		C001	LING TOW	ER FANS									
	ELEC	0	0	5641	10512	13838	13392	13838	13838	13392	7496	6092	0	98,
	PK	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	0.0	1
	EQ5100		C001	LING TOW	ER FANS									
	WATER	0	0	298	637	819	792	799	822	. 811	478	328	•	_
	PK	0.0	0.0	1.0	1.3	1.4	1.4	1.3	1.4	1.4	1.4	1.1	0.0	5,
	EQ5001		~~~											
	ELEC	0	CHI	LLED WATI 11563	21261		ANT VOLU							
	PK	0.0	0.0	37.3	37.3	27751 37.3	26856 37.3	27751 37.3	27751 37.3	26856 37.3	15032 37.3	12309 37.3	0.0	197, 3
											27.13	37.3	0.0	3
	EQ5010		CONI	DENSER W	ATER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	9238	16986	22171	21456	22171	22171	21456	12009	9834	0	157,
	PK	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	0.0	2
	EQ5300		CON	rol pani	EL & INT	ERLOCKS								
	ELEC	0	0	310	570	744	720	744	744	720	403	330	0	5,
	PK	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	5,
	EQ1001S		2 (ביוים כיפאוייי	OT ERITOR T	רט זו זטר	<550 TON	·c						
			2-3	TIME CEMIL	CTEOGNI	CUITITEK	COOU TON	3						
	ELEC	0	0	0	0	84940	110638		151120	106423	6520	0	0	604,

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4 ECO H2 - WATERSIDE EQUIPMENT

				E Q	UIP	MENT	ENE	RGY (CONS	UMPTI	0 N			
D - f	P													
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	8891	11011	13838	13838	10416	818	0	0	58,813
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
3	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	486	625	811	834	598	40	0	0	3,393
	PK	0.0	0.0	0.0	0.0	1.2	1.3	1.4	1.4	1.3	1.0	0.0	0.0	1.4
3	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME.						
	ELEC	0	0	0	0	17829	22082	27751	27751	20888	1641	0	0	117,943
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
3	EQ5010		COND	ENSER WA	TER PUM	P-CV (HIG	H EFFIC.	1						
	ELEC	0	0	0	0	14244	17642	22171	22171	16688	1311	0	0	94,228
	PK	0.0	0.0	0.0	0.0	.29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
3	EQ5300		CONT	ROL PANE	I. & INT	ERLOCKS								
	ELEC	0	0	0	0	478	592	744	744	560	44	0	0	2 162
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	3,162 1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1
ECO H3 - WATERSIDE EQUIPMENT

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			·
Ref	Equip					Mon	thly Cor	sumption	1					
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	260391	235223	262320	251681	261356	253609	259427	262320	251681	261356	251681	259427	3,070,472
,	PK	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1				E UTILIT										
	CHILLD	0	0	0	0	35786	34632	35786	35786	34632	35786	0	0	212,410
	PK	0.0	0.0	0.0	0.0	48.1	48.1	48.1	48.1	48.1	48.1	0.0	0.0	48.1
2		•	BAS	E UTILIT	Y									
	CHILLD	30504	27552	30504	29520	0	0	0	0	0	0	29520	30504	178,104
	PK	41.0	41.0	41.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	41.0	41.0
1	YSCRW22			K W.C. S										
	ELEC	27398		39914				69115	72901	70419	57348	40262	29684	628,893
	PK	91.9	47.1	119.6	119.3	128.5	127.9	130.7	136.3	133.8	125.9	102.6	107.4	136.3
1	EQ5100		COC	LING TOW	ER FANS									
	ELEC	1562	345	4731	7896	8333	8064	8333	8333	8064	6603	5117	2050	69,432
	PK	10.2	6.3	11.2	11.2	11.2	11.2	11.2	11.2	11.2				11.2

ef	Equip					Mor	thly Cor	nsumption	1					
ım	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
1	EQ5100		COO:	LING TOW	ER FANS									
	WATER	183	122	301	470	495	479	482	497	490	418	303	202	4,4
	PK	0.7	0.4	0.9	0.8	0.9	0.8	0.8	0.8	0.9	0.9	0.8	0.8	. 4,4
1	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOL	JME						
	ELEC	11086	10013	11086	10728	11086	10728	11086	11086	10728	11086	10728	11086	130,5
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	130,3
1	EQ5011		CON	DENSER W.	ATER PUM	P-CV (MEI	OIUM EFF	IC.)						
	ELEC	8333	7526	8333	8064	8333	8064	8333	8333	8064	8333	8064	8333	98,1
	PK	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11
1	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	744	672	744	720	744	720	744	744	720	744	720	744	8,5
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
2	EQ1001S		2-5	STG CENT	RIFUGAL	CHILLER	<550 TO	NS						
	ELEC	0	0	44058	99951	131539	129643	132048	137385	133483	73816	48831	0	930,
	PK	0.0	0.0	155.3	214.3	230.7	229.5	233.2	242.9	240.1	226.7	165.3	0.0	24:
2	EQ5100		COO	LING TOW	ER FANS									
	ELEC	0	0	5641	10512	13838	13392	13838	13838	13392	7496	6092	0	98,
	PK	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	0.0	1
2	EQ5100		C001	LING TOW	ER FANS									
	WATER	0	0	298	637	819	792	799	822	811	478	328	0	5,
	PK	0.0	0.0	1.0	1.3	1.4	1.4	1.3	1.4	1.4	1.4	1.1	0.0	
!	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	11563	21261	27751	26856	27751	27751	26856	15032	12309	0	197,
	PK	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	0.0	3
:	EQ5010	•	CONI	DENSER W	ATER PUM	P-CV(HIC	H EFFIC.	. }						
	ELEC	0	0	9238	16986	22171	21456	22171	22171	21456	12009	9834	0	157,
	PK	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	0.0	2
	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	0	0	310	570	744	720	744	744	720	403	330	0	5,
	PK	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	
	EQ1001S		2-5	STG CENTI	RIFUGAL	CHILLER	<550 TON	ıs						
	ELEC	0	0	0	0	84940	110638	145249	151120	106423	6520	0	0	604,
	PK	0.0	0.0	0.0	0.0	214.7	228.3	256.6	267.2	238.0	161.1	0.0	0.0	26*

				E Q	UIP	MENT	ENE	RGY	CONS	ÜMPTI	0 N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	0ct	Nov	Dec	Total
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	8891	11011	13838	13838	10416	818	0	0	58,813
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
3	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	486	625	811	834	598	40	0	0	3,393
	PK	0.0	0.0	0.0	0.0	1.2	1.3	1.4	1.4	1.3	1.0	0.0	0.0	1.4
3	EQ5001		CHIL	LED WATE	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	17829	22082	27751	27751	20888	1641	0	0	117,943
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
3	EQ5010		COND	ENSER WA	TER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	14244	17642	22171	22171	16688	1311	0	0	94,228
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
3	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	478	592	744	744	560	44	0	0	3,162
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO H4 - WATERSIDE EQUIPMENT

Equip					Mon	thly Con	sumption						
Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
LIGHTS													
ELEC	260391	235223	262320	251681	261356	253609	259427	262320	251681	261356	251681	259427	3,070,4
PK	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443
. MISC LD													
ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	c
MISC LD													
GAS	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ı
MISC LD													
OIL	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MISC LD													
P STEAM	0	0	0	0	• 0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MISC LD													
P HOTH20	0	0	0	0	0	0	0	0	. 0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MISC LD													
P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
			E UTILIT										
CHILLD PK	0	0	0	0	35786	34632	35786	35786	34632	35786	0	0	212,
PK	0.0	0.0	0.0	0.0	48.1	48.1	48.1	48.1	48.1	48.1	0.0	0.0	4
		BAS	E UTILIT	Y									
CHILLD	30504	27552	30504	29520	0	0	0	0	0	0	29520	30504	178,
PK	41.0	41.0	41.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	41.0	4
		ENG	INE DRIV	EN CHILI	ER, 80 1	CONS							
GAS	3080	2266	8479	9730	11400	12388	14096	14957	12532	8552	9087	3281	109,
PK	9.5	6.7	23.7	28.7	23.5	25.3	29.2	30.8	26.7	28.6	26.0	10.1	3
EQ5100		COC	LING TOW	ER FANS									
ELEC	756	0	6780	12425	13838	13392	13838	13838	13392	9082	7241	1413	105,
PK	9.2	1.7	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	11.6	1

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2
ECO H4 - WATERSIDE EQUIPMENT

				E (UIPI	MENT	ENE	RGY (CONSI	UMPT	I O N			
Ref	Equip					Mont	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		C00:	LING TOW	ER FANS									
	WATER	241	163	749	910	1077	1138	1258	1309	1142	768	792	262	9,810
	PK	0.9	0.5	2.1	2.4	2.0	2.1	2.3	2.4	2.2	2.4	2.2	1.0	2.4
1	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	22171	20026	22171	21456	22171	21456	22171	22171	21456	22171	21456	22171	261,048
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
1	EQ5010		CON	DENSER W	ATER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	16666	15053	16666	16128	16666	16128	16666	16666	16128	16666	16128	16666	196,224
	PK	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
1	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	744	672	744	720	744	720	744	744	720	744	720	744	8,760
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1			HEA	TER FOR I	ENGINE D	RIVEN CH	ILLER							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2			ENG	INE DRIV	EN CHILL	ER, 80 T	ons							
	GAS	0	0	0	4253	11400	12388	14096	14957	12532	3129	0	0	72,753
	PK	0.0	0.0	0.0	12.7	23.5	25.3	29.2	30.8	26.7	15.3	0.0	0.0	30.8
2	EQ5100		C00	LING TOW	ER FANS									
	ELEC	0	0	0	6696	13838	13392	13838	13838	13392	4929	0	0	79,924
	PK	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
2	EQ5100		C00	LING TOW	ER FANS									
	WATER	0	0	0	421	1077	1138	1258	1309	1142	315	0	0	6,660
	PK	0.0	0.0	0.0	1.2	2.0	2.1	2.3	2.4	2.2	1.5	0.0	0.0	2.4
2	EQ5001	-	CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	10728	22171	21456	22171	22171	21456	7897	0	0	128,051
	PK	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5010		CON	DENSER W.	ATER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	8064	16666	16128	16666	16666	16128	5936	0	0	96,253
	PK	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22.4
2	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	0	0	0	360	744	720	744	744	720	265	0	0	4,297
	PK	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO H4 - WATERSIDE EQUIPMENT

				E Q	UIPM	E N T	ENER	GY	ONSU	мрті	O N			
Ref	Equip				· • • • • • • • • • • • • • • • • • • •	Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2			HEAT	ER FOR EN	GINE DR	IVEN CHI	LLER							
	ELEC	112	101	112	54	0	0	0	0	0	72	108	112	669
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

ECO I - RETROFIT BOILER PLANT

				Е	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	260391	235223	262320	251681	261356	253609	259427	262320	251681	261356	251681	259427	3,070,472
	PK	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.2
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	E UTILIT	Y									
	HOTLD	440	397	440	426	0	0	0	0	0	0	426	440	2,567
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
2		·		SE UTILIT	Y									
	HOTLD	0	0	0	0	379	367	379	379	367	379	0	0	2,252
	PK	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5
1				TERTUBE E	OILER WI	TH FULL	MODULATI	ON						
	GAS	12876	12013	9675	7444	8547	6932	6048	6094	7282	10787	9322	12800	109,819
	PK	27.2	28.2	18.4	15.7	16.7	14.8	13.5	13.7	15.4	21.0	18.4	27.2	28.2
1	EQ5020		HEA	ATING WAT	ER CIRCU	JLATION I	PUMP							
	ELEC	13838	12499	13838	13392	13838	13392	13838	13838	13392	13838	13392	13838	162,936
	PK	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO I - RETROFIT BOILER PLANT

				Е С	UIPM	ENT	ENEF	GY C	onsu	меті	O N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5311		BOIL	ER CONTR	ROLS									
	ELEC	93	84	93	90	93	90	93	93	90	93	90	93	1,095
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1	EQ5020		HEAT	'ING WATE	ER CIRCUL	ATION PU	IMP							
	ELEC	1491	1347	1491	1443	0	0	0	0	0	0	1443	1491	8,706
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
2			WATE	RTUBE BO	OLLER WIT	H FULL N	ODULATIO	ON						
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	EQ5020		HEAT	'ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	EQ5311		BOIL	ER CONTR	ROLS									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3			WATE	RTUBE BO	ILER WIT	H FULL N	ODULATIO	ON					•	
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5311		BOIL	ER CONTR	ROLS									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4		-	STEA	M BOILER	ı									
	GAS	3896	3519	3868	3724	0	0	0	0	0	0	3752	3897	22,656
	PK	5.5	5.2	5.2	5.2	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	5.5
4	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

01 Card - Job Information -----

Project: 03-0185.06 EEAP BOILER-CHILLER STUDY Location: FT. SAM HOUSTON - SAN ANTONIO, TX. Client: CORPS OF ENGINEERS - FT. WORTH, TEXAS

Program User: HUITT - ZOLLARS INC.

Comments: AREA 1300

Card 08----- Climatic Information -----

Summer Winter Summer Summer Winter Summer Winter Weather Clearness Clearness Design Design Design Building Ground Ground Code Number Dry Bulb Wet Bulb Dry Bulb Orientation Reflect Reflect

SANANTON

Card 11----- Energy Simulation Parameters -----

1st Month Last Month Level Builds
Energy Of Holiday Calendar Floor

Building

Simulation Simulation Calculation Code Code Area

ARMY1996

----- Load Section Alternative #1 -----

Card 19- Load Alternative -

Number Description

AREA 1300 EXISTING BUILDINGS

	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	ADMIN 1350	179	180	3	3	2.54	12.5			
10	10	DINING 1350	107	108	3	3	2.54	12.5			
15	15	KITCHEN 1350	69	69	3	3	2.54	12.5			
20	20	BARR 1350	398	399	3	3	2.54	12.5			
25	25	ADMIN 1374	100	100	3	4	2.54	13			
30	30	BARR 1374	240	240	3	4	2.54	13			
35	35	ADMIN 1375	100	100	3	4	2.54	13			
40	40	BARR 1375	240	240	3	4	2.54	13			
45	45	ADMIN 1379	100	100	3	4	2.54	13			

Card 20				Genera	l Room	Paramete	rs				
	Zone						Acoustic		Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors		Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	•
50	50	BARR 1379	240	240	3	4	2.54	13	-		
55	55	ADMIN 1380	100	100	3	4	2.54	13			
60	60	BARR 1380	240	240	3	4	2.54	13			
65	65	BLDG. 1385	82	62	3	3.5	2.54	12			
70	70	ADMIN 1382	60	60	3	4	2.54	12			
75	75	BARR 1382	161	161	3	2	2.54	10.5			
80	80	KITCH 1377	100	100	3	3	2.54	12			
85	85	DIN 1377	116	116	3	3	2.54	12			
90	90	BARR 1384	366	366	8	1.5		10			
95	95	LOUNGE 1384	57	57.5	8	1.5		10			
100	100	BLDG 1387	121.5	122	3	5.5	2.54	15.5			
105	105	BLDG 1396	100.5	101	8	5		25			
110	110	CHAPEL 1398	67.5	67.5	8	3		24			
115	115	OFFICE 1398	51	51	8	1	2.54	10			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70		ROOM		YES
10	78	50	78		70	70		ROOM		NO
15	78	50	78		70	70		ROOM		NO
20	78	50	78		70	70		ROOM		NO
25	78	50	78		70	70		ROOM		NO
30	78	50	78		70	70		ROOM		NO
35	78	50	78		70	70		ROOM		NO
40	78	50	78		70	70		ROOM		NO
45	78	50	78		70	70		ROOM		NO
50	78	50	78		70	70		ROOM		NO
55	78	50	78		70	70		ROOM		NO
60	78	50	78		70	70		ROOM		NO
65	78	50	78		70	70		ROOM		NO
70	78	50 -	78		70	70		ROOM		NO
75	78	50	78		70	70		ROOM		NO
80	78	50	78		70	70		ROOM		NO
85	78	50	78		70	70		ROOM		NO
90	78	50	78		70	70				
95	78	50	78		70	70				
100	78	50	78		70	70				
105	78	50	78		70	70				
110	78	50	78		70	70				
115	78	50	78		70	70				

Card 22				Roof Para	ameters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
5	1	NO	164	163	0.05	21			
10	1	YES			0.05	21			
15	1	YES			0.05	21			
20	1	NO	282	282	0.05	21			
25	1	NO	88	30	0.07	43			
30	1	NO	164	164	0.07	43			
35	1	NO	88	30	0.07	43			
40	1	NO	164	164	0.07	43			
45	1	NO	88	30	.07	43			
50	1	NO	164	164	0.07	43			
55	1	NO	83	30	0.07	43			
60	1	NO	164	164	0.07	43			
65	1	YES			0.08	47			
70	1	YES			0.07	37			
75	1	NO	114	114	0.07	37			
80	1	YES			0.11	47			
85	1	YES			0.11	47			
90	1	NO	170	170	0.06	28			
100	1	YES			0.11	47			
105	1	NO	155	61.5	0.23	47			
110	1	YES			0.09	37			
115	1	YES			0.1	37			

Card 24				Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
5	1	128	12.5	.15	29	0			
20	1	1130	12.5	.15	29	0			
20	2	1400	12.5	.15	29	90			
20	3	1130	12.5	.15	29	180			
20	4	1400	12.5	.15	29	270			
25	1	88 .	13	.15	94	180			
25	2	40	13	.20	61	270			
25	3	40	13	.20	61	90			
30	1	912	13	.13	80	180			
30	2	768	13	.13	80	270			
30	3	912	13	.13	80	0			
30	4	768	13	.13	80	90			
35	1	88	13	.15	94	180			
35	2	40	13	.20	61	270			
35	3	40	13	.20	61	90			
40	1	912	13	.13	80	180			
40	2	768	13	.13	80	270			
40	3	912	13	.13	80	0	,		
40	4	768	13	.13	80	90			
45	1	88	13	.15	94	0			
45	2	40	13	.20	61	90			

					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectand
Number	Number	•	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplie
45	3	40	13	.20	61	270			
50	1	912	13	.13	80	0			
50	2	768	13	.13	80	90			
50	3	912	13	.13	80	180			
50	4	768	13	.13	80	270			
55	1	88	13	.15	94	0			
55	2	40	13	.20	61	90			
55	3	40	13	.20	61	270			
60	1	912	13	.13	80	0			
60	2	768	13	.13	80	90			
60	3	912	13	.13	80	180			
60	4	768	13	.13	80	270			
65	1	82	12	.22	58	0			
65	2	62	12	.22	58	90			
65	3	82	12	.22	58	180			
65	4	62	12	.22	58	270			
70	1	44	12	.22	58	0			
70	2	52	12	.22	58	90			
70	3	68	12	.22	58	270			
75	1	360	10.5	.22	58	0			
75	2	312	10.5	.22	58	90			
75	3	412	10.5	.22	58	180			
75	4	312	10.5	.22	58	270			
80	1	62	12	.10	58	90			
80	2	32	12	.10	58	270			
85	1	82	12	.10	58	0			
85	2	160	12	.10	58	90			
85	3	82	12	.10	58	180			
85	4	124	12	.10	58	270			
90	1	213	53	0.20	58	0			
90	2	210.5	53	0.20	58	90			
90	3	167.5	53	0.20	58	180			
90	4	243	53	0.20	58	150			
90	5	180	53	0.20	58	270			
90	6	227	53	0.20	58	330			
90	7	45.5	53	0.20	58	240			
95	1	72	10.6	0.20	58	0			
95	2	72	10.6						
100	1	122	15	0.20	58	180			
100	2	122			54	0			
100	3		14	0.1	54	90			
100		122	15	0.1	54	180			
	4	121	14	0.1	54	270			
105	1	155	20	.21	54	0			
105	2	61.5	20	.21	54	90			
105	3	155	20	.21	54	180			
105	4	61.5	18	.21	54	270			
110	1	101	21	.22	58	0			

Card 24				Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
110	2	46	22	.22	58	90			-
110	3	101	21	.22	58	180			
110	4	46	22	.22	58	270			
115	1	37	12	.22	58	0			
115	2	71	12	.22	58	90			
115	3	71	12	.22	58	270			

Card 25	;				W	all/Glass Par	ameters		 	
				Pct Glass				Internal		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Transmittance	
5	1	4	5.5	12	.73	1				
20	1	4	5.5	272	.73	1	3			
20	2	4	5.5	84	.73	1	3			
20	3	4	5.5	272	.73	1	3			
20	4	4	5.5	84	.73	1	3			
25	1	4	7	16	1.1	.67	4			
30	1	2	4	144	1.1	.67	4			
30	2	2	4	72	1.1	.67	4			
30	3	2	4	116	1.1	.67	4			
30	4	2	4	72	1.1	.67	4			
35	1	4	7	16	1.1	.67	4			
40	1	2	4	144	1.1	.67	4			
40	2	2	4	72	1.1	.67	4			
40	3	2	4	116	1.1	.67	4			
40	4	2	4	72	1.1	.67	4			
45	1	4	7	16	1.1	.67	4			
50	1	2	4	144	1.1	.67	4			
50	2	2	4	72	1.1	.67	4			
50	3	2	4	116	1.1	.67	4			
50	4	2	4	72	1.1	.67	4			
55	1	4	7	16	1.1	.67	4			
60	1	2 .	4	144	1.1	.67	4			
60	2	2	4	72	1.1	.67	4			
60	3	2	4	116	1.1	.67	4			
60	4	2	4	72	1.1	.67	4			
65	1	4	4	8	1.1	1	5			
65	2	4	4	8	1.1	1	5			
65	3	4	4	6	1.1	1	5			
65	4	4	4	8	1.1	1	5			
70	1	5	3	7	1.1	1				
70	2	5	3	1	1.1	1				
75	1	6	3	23	1.1	1				
75	2	6	3	16	1.1	1				
75	3	6	3	24	1.1	1				

Card 25	;				W	ameters					
				Pct Glass				Internal			Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Туре	Ret. Air	Transmittance	Reflectance
75	4	6	3	14	1.1	1					
85	2	5	5	6	1.1	1					
85	4	5	5	6	1.1	1					
90	1	5	2.5	92	1.1	0.67					
90	2	5	2.5	100	1.1	0.67					
90	3	5	2.5	92	1.1	0.67					
90	4	5	2.5	120	1.1	0.67					
90	5	5	2.5	100	1.1	0.67					
90	6	5	2.5	100	1.1	0.67					
95	1	8	2.5	8	1.1	0.67					
95	2	8	2.5	8	1.1	0.67					
100	1	5	2	3	0.8	1					
100	3	5	2	4	0.8	1					
100	4	5	3	10	0.8	1					
105	2	10	5	, 2	1.1	1					
110	1	4	2	28	1.1	0.67					
110	2	4	2	28	1.1	0.67					
110	3	4	2	56	1.1	0.67					
115	1	4	2	3	1.1	0.67					
115	2	3	2	3	1.1	0.67					
115	3	4	2	3	1.1	0.67					

Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
lumber	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan		Controls
;	FSHOFFIC	FSHOFFIC								
.0	FSHDINP	FSHDINL								
.5	FSHKITCH	FSHKITCH								
0	FSHBARRP	FSHBARRL								
:5	FSHOFFIC	FSHOFFIC								
0	FSHBARRP	FSHBARRL								
5	FSHOFFIC	FSHOFFIC								
:0	FSHBARRP	FSHBARRL								
5	FSHOFFIC	FSHOFFIC								
0	FSHBARRP	FSHBARRP								
5	FSHOFFIC	FSHOFFIC								
0	FSHBARRP	FSHBARRL								
5	FSHOFFIC	FSHOFFIC								
0	FSHOFFIC	FSHOFFIC								
5	FSHBARRP	FSHBARRL								
0	FSHKITCH	FSHKITCH								
5	FSHDINP	FSHDINL								
0	FSHBARRP	FSHBARRL								
5	FSHLGEP	FSHLGEL								
.00	FSHGROCP	FSHGROCL								

Card 26				S	chedules -						
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting	
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan		Controls	
105	FSHTHEAP	FSHTHEAL								00015	
110	FSHCHAPP	FSHCHAPL									
115	FSHOFFIC	FSHOFFIC									

Card 27	'				Peopl	e and Ligh	its				
							Lighting				hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible			Units	Туре	Factor			Point 2
5	175	SF-PERS	250	200	1.9	WATT-SF	ASHRAE2				
10	300	PEOPLE	275	275	1.4	WATT-SF	ASHRAE2				
15	20	PEOPLE	275	475	1.5	WATT-SF	ASHRAE2				
20	1538	PEOPLE	250	200	1	WATT-SF	ASHRAE2				
25	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
30	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
35	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
40	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
45	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
50	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
55	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
60	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
65	16	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				
70	8	PEOPLE	250	200	2.5	WATT-SF	ASHRAE2				
75	232	PEOPLE .	250	200	.65	WATT-SF	ASHRAE2				
80	30	PEOPLE	250	200	2.2	WATT-SF	ASHRAE2				
85	800	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2				
90	300	PEOPLE	250	200	1	WATT-SF	ASHRAE1				
95	150	PEOPLE	250	200	2.2	WATT-SF	ASHRAE1				
100	150	PEOPLE	250	200	2.0	WATT-SF	ASHRAE1				
105	490	PEOPLE	250	200	1.7	WATT-SF	ASHRAE1				
110	350	PEOPLE	250	200	1.9	WATT-SF	ASHRAE1				
115	5	PEOPLE	250	200	1.7	WATT-SF	ASHRAE1				

Card 28	3			Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air		•
5	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
10	1	DIN. EQPT.	1	WATT-SF	FSHDINL	NONE					
20	1	TV ETC.	1	WATT-SF	FSHBARRL	NONE					
25	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
30	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE					
35	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
40	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE					
45	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					

Card 28				Mis	cellaneous	s Equipment							
	Misc		Energy	Energy		Energy	Percent	Percent	Percent				
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional		
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path		
50	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE							
55	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE							
60	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE							
65	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE							
70	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE							
75	1	PERS APP.	1	WATT-SF	FSHBARRL	NONE							
80	1	KITCHEN	8	WATT-SF	FSHKITCH	NONE							
85	1	DINING	1	WATT-SF	FSHDINL	NONE							
90	1	BARR EQ	2	WATT-SF	FSHBARRL	NONE							
95	1	BARR EQ	1.3	WATT-SF	FSHLGEL	NONE							
100	1	RETAIL EQ	3	WATT-SF	FSHGROCL	NONE							
115	1	OFFICE EQ	1.4	WATT-SF	FSHOFFIC	NONE							

			lation			CoolingHeatingReheat Minimum-								
Room	Coo	Ling	Hea	ing	Coo	ling	Hea	ting	Reheat	Minimum				
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units				
5	3975	CFM	3975	CFM										
LO	20	CFM-P	20	CFM-P										
15	3000	CFM	3000	CFM										
20	17385	CFM	17385	CFM										
25	7700	CFM	7700	CFM										
30	12000	CFM	12000	CFM										
35	7700	CFM	7700	CFM										
10	12000	CFM	12000	CFM										
15	7700	CFM	7700	CFM										
50	12000	CFM	12000	CFM										
55	7700	CFM	7700	CFM										
50	12000	CFM	12000	CFM										
55	900	CFM	900	CFM										
70	20	CFM-P	20	CFM-P										
75	20	CFM-P	20	CFM-P										
30	12700	CFM	12700	CFM										
35	12200	CFM	12200	CFM										
90	4050	CFM	4050	CFM										
95	20	CFM-P	20	CFM-P										
100	6972	CFM	6972	CFM										
105	15	CFM-P	15	CFM-P										
110	15	CFM-P	15	CFM-P										
115	20	CFM-P	20	CFM-P										

Card 31 Partition Parameters													
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent				
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No				
5	1	264	12.5	.23	103	HRLYOADB							
5	2	264	12.5	.23	103	HRLYOADB							
5	3	680	12.5	.15	103	HRLYOADB							
10	1	220	12.5	.44	107	HRLYOADB							
25	1	244	13	.20	107	HRLYOADB							
30	1	244	13	.20	107	HRLYOADB							
35	1	244	13	.20	107	HRLYOADB							
40	1	244	13	.20	107	HRLYOADB							
45	1	244	13	.20	107	HRLYOADB							
50	1	244	13	.20	107	HRLYOADB							
55	1	244	13	.20	107	HRLYOADB							
60	1	244	13	.20	107	HRLYOADB							
80	1	30	12	.10	107	HRLYOADB							

Card 33-	Card 33 External Shading												
		OVERHA	ANG		VERTICAL FINS								
		Height				Right	Adjacent						
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building				
Туре	Height	Glass	Out	Width	Left	Out	Right	Out	Flag				
3	5.5	1	2										
4	4	1	5										
5	4	1	3										

------ System Section Alternative #1 -----

Card 39- System Alternative Number Description

1 EXISTING AIRSIDE EQUIPMENT

Card 40----- System Type ----------OPTIONAL VENTILATION SYSTEM-----System Ventil Set System Deck Cooling Heating Cooling Heating Static Number Type Location SADBVh SADBVh Schedule Schedule Pressure 1 VRH 2 BPMZ 3 BPMZ BPMZ 4 5 BPMZ 6 BPMZ BPMZ 8 BPMZ 9 BPMZ BPMZ 10 11 SZ

Card 40	Card 40 System Type											
OPTIONAL VENTILATION SYSTEM												
System		Ventil					Fan					
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static					
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure					
13	FC											
14	FC											

System												
Set	Ref	#1 .	Ref	#2	Ref	Ref #3		Ref #4		Ref #5		#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	20									_	
2	25	30										
3	35	40										
4	45	50										
5	55	60										
6	65	65										
7	70	75										
8	80	85										
9	90	90										
10	95	95										
11	100	100										
12	105	105										
13	110	110										
14	115	115										

Card 42 Fan SP and Duct Parameters											
				Mn Exh			Cool	Return		Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										
2	1.0										
3	1.0										
4	1.0		-								
5	1.0										
6	1.0										
7	1.0										
8	1.0										
9	1.0										
10	1.0										
11	1.0										
12	1.0										
13	1.0										
14	1.0										

1 EQ1001S 1 438 TONS

544

TONS

442 TONS

273 TONS

2 EQ1001S 1 3 EQ1001S 1 4 EQ1001S 1

329

517

517

251

KW

KW

KW

KW

1

2

SER

SER

	Main			irect	Indirect	Auxiliary	Main	Main			Auxiliary	
Set	Cooling		Е	vap	Evap	Cooling		Preheat	Reheat	Mech.	Heating	
Number	Coil	Economiz	er C	oil	Coil	Coil	Coil	Coil	Coil	Humidity	_	
L	FTSAMCLO	}						FTSAMHTG			COII	
2	FTSAMCLO	3						FTSAMHTG				
3	FTSAMCLO	,						FTSAMHTG				
4	FTSAMCLO	3						FTSAMHTG				
5	FTSAMCLO	;						FTSAMHTG				
6	FTSAMCLO	}						FTSAMHTG				
7	FTSAMCLO	}						FTSAMHTG				
В	FTSAMCLO]						FTSAMHTG				
9	FTSAMCLO	}						FTSAMHTG				
10	FTSAMCLO	}						FTSAMHTG				
11	FTSAMCLO	;						FTSAMHTG				
12	FTSAMCLO	;						FTSAMHTG				
13	FTSAMCLO	;						FTSAMHTG				
14	FTSAMCLO	}						FTSAMHTG				
Card 5						escription /	TOD Sched	lules				
	Ele	ec Consump ne of Day	Elec	Demand	d Demand	escription /	TOD Sched	ules		Demar	nd Limit	
Alterna	Ele ative Tim	c Consump	Elec Time	Demand	d Demand / Limit	escription /				Demar	nd Limit Temperature	
Alterna Number	Ele ative Tim	ec Consump ne of Day	Elec Time	Demand of Day	I Demand Limit Max KW I		Descriptio	on		Deman	nd Limit Temperature	
Alterna Number 1 Card 60	Ele ative Tim Sch	ec Consump ne of Day nedule	Elec Time Sche	Demand of Day	d Demand / Limit Max KW #	Alternative EXISTING WAT	Descriptio ERSIDE EQU	on IIPMENT		Deman	d Limit Temperature Drift	
Alterna Number L Card 60	Ele ative Tim Sch	c Consump ne of Day nedule	Elec Time Sche	Demand	i Demand Limit Max KW I	Alternative EXISTING WAT	Descriptio ERSIDE EQU	on HIPMENT		Deman	d Limit Temperature Drift	
Alterna Number L Card 60 Load 1	Ele ative Tim Sch 0 All Coil Loads To	c Consump ne of Day nedule Cooling Equipment	Elec Time Sche	Demandor Day	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	8Group
Alterna Number 1 Card 60 Load :	Ele ative Tim Sch O All Coil Loads To Cool Ref	c Consump ne of Day nedule Cooling Equipment	Elec Time Sche Sche	Demand of Day dule	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	
Alterna Number 1 Card 60 Load 1 Asgn 1	Ele ative Tim Sch 0 All Coil Loads To Cool Ref	c Consump ne of Day nedule Cooling Equipment	Elec Time Sche Sche	Demand of Day dule	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	8Group
Alterna Number 1 Card 66 Load 1 Asgn 1 Ref (1	Ele ative Tim Sch 0 All Coil Loads To Cool Ref 1	c Consump ne of Day nedule Cooling Equipment	Elec Time Sche Sche	Demando of Daydule up 1- n End 1	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	8Group
Alterna Number 1 Card 66 Load 2 Asgn 1 Ref (1) 2 2 3	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2	c Consump ne of Day nedule Cooling Equipment	Elec Time Sche Sche -Gro Begi: 1 2	Demand of Day dule up 1- n End 1 8	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	8Group
Alterna Number 1 Card 66 Load 2 Asgn 1 Ref 0 1 2 2 3 4 9	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5	c Consump ne of Day nedule Cooling Equipment	-Gro-Begi: 1 2 9 11	Demand of Day dule	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	8Group
Card 66 Load 1 Asgn 1 Ref 6	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5 6	c Consump ne of Day nedule Cooling Equipment	Elec Time Sche	Demand of Day dule	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift	8Group
Alterna Vumber L Card 66 Load 2 Asgn 1 Ref 6 L 2 L 3 L 4 L 5	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5	c Consump ne of Day nedule Cooling Equipment	-Gro-Begi: 1 2 9 11	Demand of Day dule	d Demand Limit Max KW I F	Alternative EXISTING WAT Cooling I -Group 3-	Descriptio ERSIDE EQU oad Assign -Group 4-	on HIPMENT ment -Group 5-	-Group 6	Deman	d Limit Temperature Drift 7Group	8Group
Alterna Vumber L Card 66 Load 1 Asgn 1 Ref 6 L 1 2 2 3 4 4 5 6 6	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5 6 8	ce Consump ne of Day nedule Cooling Equipment Sizing	Elec Time Sche Sche -Gro Begi: 1 2 9 11 12 13	Demand of Day dule	d Demand Limit Max KW F F Group 2- Begin End	Alternative EXISTING WAT Cooling I -Group 3- Begin End	Descriptio ERSIDE EQU oad Assign -Group 4- Begin End	IPMENT IMMENT Group 5- Begin End	-Group 6 Begin En	Schedule Group d Begin E	d Limit Temperature Drift 7Group Cnd Begin E	8Group
Alterna Number Load 66 Load 1 Asgn 1 Ref 66 L 2 L 3 L 4 L 5 L 5 L 6 L 6 L 6 L 6 L 7 L 7 L 7 L 7 L 7 L 7 L 7 L 7 L 7 L 7	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5 6 8	ec Consump ne of Day nedule Cooling Equipment Sizing	Elec Time Sche Sche -Gro Begi: 1 2 9 11 12 13	Demand of Day dule	d Demand Limit Max KW A Group 2- Begin End	Alternative EXISTING WAT Cooling I -Group 3- Begin End	Descriptio ERSIDE EQU oad Assign -Group 4- Begin End	on IIPMENT Ment -Group 5- Begin End	-Group 6 Begin En	Deman	nd Limit Temperature Drift 7Group End Begin E	8Group End Begin E
Alterna Number 1 Card 66 Load 2 Asgn 1 Ref 6 1 2 2 2 3 4 4 9 5 6	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5 6 8	ec Consump ne of Day nedule Cooling Equipment Sizing	Elec Time Sche -Gro Begi: 1 2 9 11 12 13	Demand of Day dule up 1- n End 1 8 10 11 12 14	d Demand Limit Max KW G Group 2- Begin End	Alternative EXISTING WAT Cooling I -Group 3- Begin End	Descriptio ERSIDE EQU oad Assign -Group 4- Begin End nt Paramet	ers	-Group 6 Begin En	Deman	nd Limit Temperature Drift 7Group End Begin E	8Group End Begin E
Alterna Number 1 Card 66 Load 4 Asgn 1 1 2 3 4 5 6 6 Card 66 Card 66 Cool Eco	Eleative Tim Sch O All Coil Loads To Cool Ref 1 2 4 5 6 8	ec Consump ne of Day nedule Cooling Equipment Sizing	Elec Time Sche Sche -Gro Begi 1 2 9 11 12 13	Demand of Day dule up 1- n End 1 8 10 11 12 14	d Demand Limit Max KW A Group 2- Begin End	Alternative EXISTING WAT Cooling I -Group 3- Begin End Ling Equipme	Descriptio ERSIDE EQU oad Assign -Group 4- Begin End	ersEAT RECOVE	-Group 6 Begin En	Deman	d Limit Temperature Drift 7Group End Begin F	8Group End Begin E

Card	62				Cod	oling Equip	ment Par	ameters -					
Cool	Equip	Num		COOL	NG			HEAT R	ECOVERY		Seq ,		Demand
Ref	Code	Of	Capa	city	Ener	gy	Capa	city	Ene	rgy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
5	EQ1288L	1	97	TONS	153.3	KW							
6	EQ1170S	1	7.5	TONS	10.0	KW					1	PAR	
7	EQ1172S	1	50	TONS	63.2	KW					2	PAR	
8	EQ1070L	1	43.6	TONS	55.1	KW							

Card	63			Cooling Pu	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
1	29.8	KM	22.4	KM					1	
2	18.7	KW	29.8	KW					2	2
3			29.84	KW					2	
4	11.2	KW	14.9	KW					3	
7									4	
8	3.7	KW							5	

Card 65					Heating	Load Assign	ment				
Load	All Coil										
Assignment	Loads To	-Group	p 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1	1								
2	3	2	8								
3	5	9	10								
4	6	11	11								
5	7	12	12								
6	8	13	14								

Card 67	'				Неа	ating Equip	ment Pa	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1	29.8	KW	5317	MBH	7500	MBH	1					
2	BOILERWT	1	0	KW	4336	MBH	5800	MBH	2					
3	BLR2MOD	1	11.2	KW	5912	MBH	8369	MBH	1			1		
4	BLR2MOD	1	11.2	KW	5912	MBH	8369	MBH	2			3		
5	BOILERWT	1	5.6	KW	3636	MBH	5000	MBH						
6	EQ2263	1	0	KW			153.3	KW						
7	BOILERWT	1	0.2	KW	427.1	MBH	602	MBH				4		
8	BOILERWT	1	3.7	KM	381.8	MBH	525	MBH						

Card 69			Fan Equipm	ent Parame	ters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						
10	TYPFAN						
11	TYPFAN						
12	TYPFAN						
13	TYPFAN						
14	TYPFAN						

Card 70				Fan	Equip	ment K	V Over	rides -				
	1	MAIN S	YSTEM-		OTH	ER SYST	ГЕМ	DI	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	134.2											
2	33.6											
3	33.6											
4	33.6											
5	33.6											
6	2.2											
7	7.5											
8	7.5											
9	70.8											
10	3.7											
12	9.3											
13	1.9											
14	0.4											

Card 71-			Base	Utility P	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Туре	Number	Number	Temp	Temp
1	PIPE-PUMP HT LOS	14.8	TONS	FTSAMCLG	CHILL-LD	1			_
2	PIPE HT LOSS	20.2	MBH	FTSAMHTG	HOT-LD	1			
3	PIPE-PUMP HT LOS	25.8	TONS	FTSAMCLG	CHILL-LD	2			
4	PIPE HT LOSS	225.6	MBH	FTSAMHTG	HOT-LD	3			
5	PIPE-PUMP HT LOS	7.4	TONS	FTSAMCLG	CHILL-LD	4			
6	PIPE HT LOSS	5.8	MBH	FTSAMHTG	HOT-LD	5			
7	PIPE-PUMP HT LOS	1.1	TONS	FTSAMCLG	CHILL-LD	5			

Card 71-			Base	Utility F	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
8	PIPE HT LOSS	14.8	MBH	FTSAMHTG	HOT-LD	6			
9	PIPE-PUMP HT LOS	0.1	TONS	FTSAMCLG	CHILL-LD	6			
10	PIPE HT LOSS	15.8	MBH	FTSAMHTG	HOT-LD	7			
11	PIPE-PUMP HT LOS	0.8	TONS	FTSAMCLG	CHILL-LD	7			
12	PIPE HT LOSS	12.6	MBH	FTSAMHTG	HOT-LD	8			
13	PIPE-PUMP HT LOS	1.8	TONS	FTSAMCLG	CHILL-LD	8			

Card 7	4			Condenser	/ Coolin	g Tower P	arameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Туре	Cells	Low Spd	Value	Units
1	EQ5100			14.92	KW			1	50	7.46	KW
2	EQ5100			52.22	KW			2			
3	EQ5100			14.9	KW	T-WATER	CTOWER	1	50	7.4	KW
4	EQ5200			3.7	KW	T-WATER	CNDFAN	1			
5	EQ5200			5.6	KW	T-WATER	CNDFAN	1			

Card	75				Misce	llaneous A	ccessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
1	EQ5020	11.2	KW		EQ5240	7.5	KW					
2	EQ5001	18.7	KW									
3	EQ5240	7.5	KW									
4	EQ5020	0.2	KW									

----- Load Section Alternative #2 -----

Card 19- Load Alternative -Number Description

2 ECO J-INSTALL EMS FOR HVAC EQUIPMENT

Card 20)			Gener	al Room	Paramete	ers				
	Zone						Acoustic		Duplicate		Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	-
15	15	KITCHEN 1350	69	69	3	3	2.54	12.5			
20	20	BARR 1350	398	399	3	3	2.54	12.5			
25	25	ADMIN 1374	100	100	3	4	2.54	13			
30	30	BARR 1374	240	240	3	4	2.54	13			
35	35	ADMIN 1375	100	100	3	4	2.54	13			
40	40	BARR 1375	240	240	3	4	2.54	13			
45	45	ADMIN 1379	100	100	3	4	2.54	13			
50	50	BARR 1379	240	240	3	4	2.54	13			
55	55	ADMIN 1380	100	100	3	4	2.54	13			
60	60	BARR 1380	240	240	3	4	2.54	13			
65	65	BLDG. 1385	82	62	3	3.5	2.54	12			
70	70	ADMIN 1382	60	60	3	4	2.54	12			
75	75	BARR 1382	161	161	3	2	2.54	10.5			
80	80	KITCH 1377	100	100	3	3	2.54	12			
85	85	DIN 1377	116	116	3	3	2.54	12			
90	90	BARR 1384	366	366	8	1.5		10			
95	95	LOUNGE 1384	57	57.5	8	1.5		10			
100	100	BLDG 1387	121.5	122	3	5.5	2.54	15.5			
105	105	BLDG 1396	100.5	101	8	5		25			
110	110	CHAPEL 1398	67.5	67.5	8	3		24			
115	115	OFFICE 1398	51	51	8	1	2.54	10			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70		ROOM		YES
10	78	50	78		70	70		ROOM		NO
15	78	50	78		70	70		ROOM		NO
20	78	50	78		70	70		ROOM		NO
25	78	50	78		70	70		ROOM		NO
30	78	50	78		70	70		ROOM		NO
35	78	50	78		70	70		ROOM		NO
40	78	50	78		70	70		ROOM		NO
45	78	50	78		70	70		ROOM		NO
50	78	50	78		70	70		ROOM		NO
55	78	50	78		70	70		ROOM		NO
60	78	50	78		70	70		ROOM		NO
65	78	50	78		70	70		ROOM		NO
70	78	50	78		70	70		ROOM		NO
75	78	50	78		70	70		ROOM		NO
80	78	50	78		70	70		ROOM		NO
85	78	50	78		70	70		ROOM		NO
90	78	50	78		70	70				
95	78	50	78		70	70				

Card 21	rd 21 Thermostat Parameters											
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet		
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On		
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor		
100	78	50	78		70	70						
105	78	50	78		70	70						
110	78	50	78		70	70						
115	78	50	78		70	70						

Card 22			1	Roof Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
5	1	NO	164	163	0.05	21			
10	1	YES			0.05	21			
15	1	YES			0.05	21			
20	1	NO	282	282	0.05	21			
25	1	NO	88	30	0.07	43			
30	1	NO	164	164	0.07	43			
35	1	NO	88	30	0.07	43			
40	1	NO	164	164	0.07	43			
45	1	NO	88	30	.07	43			
50	1	NO	164	164	0.07	43			
55	1	NO	83	30	0.07	43			
60	1	NO	164	164	0.07	43			
65	1	YES			0.08	47			
70	1	YES			0.07	37			
75	1	NO	114	114	0.07	37			
80	1	YES			0.11	47			
85	1	YES			0.11	47			
90	1	NO	170	170	0.06	28			
100	1	YES			0.11	47			
105	1	NO	155	61.5	0.23	47			
110	1	YES			0.09	37			
115	1	YES			0.1	37			

Card 24	ard 24 Wall Parameters											
					Wall				Ground			
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance			
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier			
5	1	128	12.5	.15	29	0						
20	1	1130	12.5	.15	29	0						
20	2	1400	12.5	.15	29	90						
20	3	1130	12.5	.15	29	180						
20	4	1400	12.5	.15	29	270						
25	1	88	13	.15	94	180						
25	2	40	13	.20	61	270						

					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectan
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplie
25	3	40	13	.20	61	90			
30	1	912	13	.13	80	180			
30	2	768	13	.13	80	270			
30	3	912	13	.13	80	0			
30	4	768	13	.13	80	90			
35	1	88	13	.15	94	180			
35	2	40	13	.20	61	270			
35	3	40	1.3	.20	61	90			
40	1	912	13	.13	80	180			
10	2	768	13	.13	80	270			
10	3	912	13	.13	80	0			
10	4	768	13	.13	80	90			
15	1	88	13	.15	94	0			
1 5	2	40	13	.20	61	90			
1 5	3	40	13	.20	61	270			
50	1	912	13	.13	80	0			
50	2	768	13	.13	80	90			
50	3	912	13	.13	80	180			
50	4	768	13	.13	80	270			
55	1	88	13	.15	94	0			
55	2	40	13	.20	61	90			
55	3	40	13	.20	61	270			
50	1	912	13	.13	80	0			
50	2	768	13	.13	80	90			
50	3	912	13	.13	80	180			
50	4	768	13	.13	80	270			
55	1	82	12	.22	58	0			
55	2	62	12	.22	58	90			
55	3	82	12	.22	58	180			
55	4	62	12	.22	58	270			
70	1	44	12	.22	58	0			
70	2	52	12	.22	58	90			
70	3	68	12	.22	58	270			
75	1	360	10.5	.22	58	0			
75	2	312	10.5	.22	58	90			
'5	3	412	10.5	.22	58	180			
15	4	312	10.5	.22	58	270			
0	1	62	12	.10	58	90			
10	2	32	12	.10	58	270			
5	1	82	12	.10	58	0			
15	2	160	12	.10	58	90			
5	3	82	12	.10					
5	4	124	12		58	180			
0	1	213		.10	58	270			
0	2	213	53	0.20	58	0			
0			53	0.20	58	90			
•	3	167.5	53	0.20	58	180			

Card 24				arameters					
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
90	5	180	53	0.20	58	270			
90	6	227	53	0.20	58	330			
90	7	45.5	53	0.20	58	240			
95	1	72	10.6	0.20	58	0			
95	2	72	10.6	0.20	58	180			
100	1	122	15	0.1	54	0			
100	2	121	14	0.1	54	90			
100	3	122	15	0.1	54	180			
100	4	121	14	0.1	54	270			
105	1	155	20	.21	54	0			
105	2	61.5	20	.21	54	90			
105	3	155	20	.21	54	180			
105	4	61.5	18	.21	54	270			
110	1	101	21	.22	58	0			
110	2	46	22	.22	58	90			
110	3	101	21	.22	58	180			
110	4	46	22	.22	58	270			
115	1	37	12	.22	58	0			
115	2	71	12	.22	58	90			
115	3	71	12	.22	58	270			

Card 25	;				W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number'	Length	Width	Windows	U-Value	Coefficient	Туре	Туре	Ret. Air	Transmittance	Reflectance
5	1	4	5.5	12	.73	1					
20	1	4	5.5	272	.73	1	3				
20	2	4	5.5	84	.73	1	3				
20	3	4	5.5	272	.73	1	3				
20	4	4	5.5	84	.73	1	3				
25	1	4	7	16	1.1	.67	4				
30	1	2	4	144	1.1	.67	4				
30	2	2 .	4	72	1.1	.67	4				
30	3	2	4	116	1.1	.67	4				
30	4	2	4	72	1.1	.67	4				
35	1	4	7	16	1.1	.67	4				
40	1	2	4	144	1.1	.67	4				
40	2	2	4	72	1.1	.67	4				
40	3	2	4	116	1.1	.67	4				
40	4	2	4	72	1.1	.67	4				
45	1	4	7	16	1.1	.67	4				
50	1	2	4	144	1.1	.67	4				
50	2	2	4	72	1.1	.67	4				
50	3	2	4	116	1.1	.67	4				
50	4	2	4	72	1.1	.67	4				
			-				-				

Card 25	5				W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
55	1	4	7	16	1.1	.67	4				
60	1	2	4	144	1.1	.67	4				
60	2	2	4	72	1.1	.67	4				
60	3	2	4	116	1.1	.67	4				
60	4	2	4	72	1.1	.67	4				
65	1	4	4	8	1.1	1	5				
65	2	4	4	8	1.1	1	5				
65	3	4	4	6	1.1	1	5				
65	4	4	4	8	1.1	1	5				
70	1	5	3	7	1.1	1					
70	2	5	3	1	1.1	1					
75	1	6	3	23	1.1	1					
75	2	6	3	16	1.1	1					
75	3	6	3	24	1.1	1					
75	4	6	3	14	1.1	1					
85	2	5	5	6	1.1	1					
85	4	5	5	6	1.1	1					
90	1	5	2.5	92	1.1	0.67					
90	2	5	2.5	100	1.1	0.67					
90	3	5	2.5	92	1.1	0.67					
90	4	5	2.5	120	1.1	0.67					
90	5	5	2.5	100	1.1	0.67					
90	6	5	2.5	100	1.1	0.67					
95	1	8	2.5	8	1.1	0.67					
95	2	8	2.5	8	1.1	0.67					
100	1	5	2	3	0.8	1					
100	3	5	2	4	0.8	1					
100	4	5	3	10	0.8	1					
105	2	10	5	2	1.1	1					
110	1	4	2	28	1.1	0.67					
110	2	4	2	28	1.1	0.67					
110	3	4	2	56	1.1	0.67					
115	1	4	2	3	1.1	0.67					
115	2	3	2	3	1.1	0.67					
115	3	4	2	3	1.1	0.67					

Card 26				S	chedules -			·		
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHOFFIC	FSHOFFIC				DAYSCHED				
10	FSHDINP	FSHDINL				DNGFANSC				
15	FSHKITCH	FSHKITCH				DNGFANSC				
20	FSHBARRP	FSHBARRL				BARRSCHD				
25	FSHOFFIC	FSHOFFIC				DAYSCHED				
30	FSHBARRP	FSHBARRL				BARRSCHD				

Card 26				S	Schedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
35	FSHOFFIC	FSHOFFIC				DAYSCHED				
40	FSHBARRP	FSHBARRL				BARRSCHD				
45	FSHOFFIC	FSHOFFIC				DAYSCHED				
50	FSHBARRP	FSHBARRP				BARRSCHD				
55	FSHOFFIC	FSHOFFIC				DAYSCHED				
60	FSHBARRP	FSHBARRL				BARRSCHD				
65	FSHOFFIC	FSHOFFIC				DAYSCHED				
70	FSHOFFIC	FSHOFFIC				DAYSCHED				
75	FSHBARRP	FSHBARRL				BARRSCHD				
80	FSHKITCH	FSHKITCH				DNGFANSC				
85	FSHDINP	FSHDINL				DNGFANSC				
90	FSHBARRP	FSHBARRL								
95	FSHLGEP	FSHLGEL								
100	FSHGROCP	FSHGROCL				DNGFANSC				
105	FSHTHEAP	FSHTHEAL				THESCHED				
110	FSHCHAPP	FSHCHAPL				CRCHSCHD				
115	FSHOFFIC	FSHOFFIC				DAYSCHED				

Card 27	'				Peopl	e and Ligh	ts				
										Daylig	
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
5	175	SF-PERS	250	200	1.9	WATT-SF	ASHRAE2				
10	300	PEOPLE	275	275	1.4	WATT-SF	ASHRAE2				
15	20	PEOPLE	275	475	1.5	WATT-SF	ASHRAE2				
20	1538	PEOPLE	250	200	1	WATT-SF	ASHRAE2				
25	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
30	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
35	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
40	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
45	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
50	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
55	35	SF-PERS	250	200	2.0	WATT-SF	ASHRAE2				
60	420	PEOPLE	250	200	1.5	WATT-SF	SUSINCAN				
65	16	PEOPLE	250	200	2.0	WATT-SF	ASHRAE2				
70	8	PEOPLE	250	200	2.5	WATT-SF	ASHRAE2				
7 5	232	PEOPLE	250	200	.65	WATT-SF	ASHRAE2				
80	30	PEOPLE	250	200	2.2	WATT-SF	ASHRAE2				
85	800	PEOPLE	250	200	1.0	WATT-SF	ASHRAE2				
90	300	PEOPLE	250	200	1	WATT-SF	ASHRAE1				
95	150	PEOPLE	250	200	2.2	WATT-SF	ASHRAE1				
100	150	PEOPLE	250	200	2.0	WATT-SF	ASHRAE1				
105	490	PEOPLE	250	200	1.7	WATT-SF	ASHRAE1				
110	350	PEOPLE	250	200	1.9	WATT-SF	ASHRAE1				
115	5	PEOPLE	250	200	1.7	WATT-SF	ASHRAE1			•	

Card 28	3			Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
10	1	DIN. EQPT.	1	WATT-SF	FSHDINL	NONE					
20	1	TV ETC.	1	WATT-SF	FSHBARRL	NONE					
25	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
30	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE					
35	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
40	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE					
45	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
50	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE					
55	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
60	1	PERS APP.	.5	WATT-SF	FSHBARRL	NONE					
65	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
70	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
75	1	PERS APP.	1	WATT-SF	FSHBARRL	NONE					
80	1	KITCHEN	8	WATT-SF	FSHKITCH	NONE					
85	1	DINING	1	WATT-SF	FSHDINL	NONE					
90	1	BARR EQ	2	WATT-SF	FSHBARRL	NONE					
95	1	BARR EQ	1.3	WATT-SF	FSHLGEL	NONE					
100	1	RETAIL EQ	3	WATT-SF	FSHGROCL	NONE					
115	1	OFFICE EQ	1.4	WATT-SF	FSHOFFIC	NONE					

Card 29					Room Airi	lows				
		Ventil	ation			Infilt	tration			
Room	Cooli	ng	Heati	ng	Coo	ling	Heat	ing	Reheat 1	Minimum
Number		Units	Value	Units	Value	Units				Units
5	3975	CFM	3975	CFM						
10	20	CFM-P	20	CFM-P						
15	3000	CFM	3000	CFM						
20	17385	CFM	17385	CFM						
25	7700	CFM	7700	CFM						
30	12000	CFM	12000	CFM						
35	7700	CFM	7700	CFM						
40	12000	CFM	12000	CFM						
45	7700	CFM	7700	CFM						
50	12000	CFM	12000	CFM						
55	7700	CFM	7700	CFM						
60	12000	CFM	12000	CFM						
65	900	CFM	900	CFM						
70	20	CFM-P	20	CFM-P						
75	20	CFM-P	20	CFM-P						
80	12700	CFM	12700	CFM						
85	12200	CFM	12200	CFM						
90	4050	CFM	4050	CFM						
95	20	CFM-P	20	CFM-P						
100	6972	CFM	6972	CFM						
105	15	CFM-P	15	CFM-P						

Card 29					- Room Air	flows				
		Ventil	ation			Infili	tration			
Room	Cooli	ng	Heat	ing	Coo	ling	Heat	ing	Reheat	Minimum
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
110	15	CFM-P	15	CFM-P						
115	20	CFM-P	20	CFM-P						

Card 31			Part	ition Param	eters -				
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No
5	1	264	12.5	.23	103	HRLYOADB			
5	2	264	12.5	.23	103	HRLYOADB			
5	3	680	12.5	.15	103	HRLYOADB			
10	1	220	12.5	.44	107	HRLYOADB			
25	1	244	13	.20	107	HRLYOADB			
30	1	244	13	.20	107	HRLYOADB			
35	1	244	13	.20	107	HRLYOADB			
40	1	244	13	.20	107	HRLYOADB			
45	1	244	13	.20	107	HRLYOADB			
50	1	244	13	.20	107	HRLYOADB			
5 5	1	244	13	.20	107	HRLYOADB			
60	1	244	13	.20	107	HRLYOADB			
80	1	30	12	.10	107	HRLYOADB			

Card 33-				E	xternal Shad	ing			
		OVERHA	MG			VERTICAL F	INS		
		Height				Left		Right	Adjacent
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building
Type	Height	Glass	Out	Width	Left	Out	Right	Out	Flag
3	5.5	1	2						
4	4	1	5						
5	4	1	3						

------ System Section Alternative #2 -----

Card 39- System Alternative Number Description

ECO J - AIRSIDE EQUIPMENT

Card 40			Syste	m Type			
			OPTION	AL VENTIL	ATION SYST	EM	
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	VRH						

Card 40			Syste	m Type			
			OPTION	AL VENTIL	ATION SYST	EM	
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Туре	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
2	BPMZ						
3	BPMZ						
4	BPMZ						
5	BPMZ						
6	BPMZ						
7	BPMZ						
8	BPMZ						
9	BPMZ						
10	BPMZ						
11	SZ						
12	BPMZ						
13	FC						
14	FC						

Card 41					Zone A	ssignmen	nt					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	20										
2	25	30										
3	35	40										
4	45	50										
5	55	60										
6	65	65										
7	70	75										
8	80	85			-							
9	90	90										
10	95	95										
11	100	100										
12	105	105										
13	110	110										
14	115	115										

Card 42				Fan	SP an	d Duct P	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										
2	1.0										

Card 42				Fan	SP and	d Duct Pa	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
3	1.0										
4	1.0										
5	1.0										
6	1.0										
7	1.0										
8	1.0										
9	1.0										
10	1.0										
11	1.0										
12	1.0										
13	1.0										
14	1.0										

System	Econ	Econ	Max Pct	Direct	Indirect	lst Stage			Ex	haust Air He	eat Recov	ery	
Set	Туре	On	Outside	Evap	Evap	Evap	Fan	Effectiv	reness	Control	Type	Exh-Side	Deck
Jumber	Flag	Point	Air	Cooling	Cooling	Cooling	Cycling	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2
L	DRY-BULB	65	100										_
2	DRY-BULB	65	100										
3	DRY-BULB	65	100										
1	DRY-BULB	65	100										
5	DRY-BULB	65	100										
5	DRY-BULB	65	100										
7	DRY-BULB	65	100										
3	DRY-BULB	65	100										
€	DRY-BULB	65	100										
10	DRY-BULB	65	100										

Card 45	;			Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling	•	Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
2	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
3	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
4	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
5	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
6	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
7	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
8	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
9	FTSAMCLG	FTSAMCLG				FTSAMHTG	FTSAMHTG	FTSAMHTG		
10	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG		
11	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

6

EQ1170S 1

EQ1172S 1

EQ1070L 1

7.5

50

TONS

TONS

43.6 TONS

10.0

63.2

55.1

KW

KW

KW

PAR

PAR

System	Main			Direct		Auxiliary		Main				
Set	Cooling			Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Auxiliary Heating	r
Tumber	Coil	Econor	nizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	-	
.2	FTSAMCLG	}						FTSAMHTG		namiaicy	COII	
.3	FTSAMCLO	}						FTSAMHTG				
14	FTSAMCLG	}						FTSAMHTG				
		Ес	quipme:	nt Section	Alternat	ive #2						
Card 59)			Ea	uipment De	escription /	' TOD Sched	ules				
				ec Demand		, soription ,	100 Belled	ares			nd Limit	
Alterna	tive Tim			me of Day						Della	Temperatur	
Number	Sch	edule	Scl	hedule	Max KW A	Alternative	Descriptio	n		Schedule	Drift	. =
						CO J - WATE	_			Sourceare	DITIL	
oad A sgn I ef C 1	All Coil Loads To Cool Ref	Cooling Equipmen	Beg 1 2	roup 1 gin End B 1 8	Group 2-	- Cooling I -Group 3- Begin End	-Group 4-	-Group 5-	-Group 6	Group	7Group	8Grou
1 4 1 5			9	10								
. 5			11									
. 8			12 13									
Card 62					Cool	ing Equipme	nt Paramet	ers				
ard 62	uip N				Cool	ing Equipme	nt Paramet					
ool Eq	N qiu	um		COOLI				EAT RECOVE		Se	∍q	Demand
ool Eq	nip N de O	um	Capac	COOLI ity	NG Energ	y	H	EAT RECOVE	RY	Se	eq rder Seq	Demand Limit
ool Eq ef Co um Na	nip N de O	um f nits Va	Capac:	COOLI ity	NGEnerg Value	y	H Capacity	EAT RECOVE	RY Energy	Se	eq rder Seq	Demand
ool Equation in the control of the c	nip N de O me U	um f nits Va 43	Capaci	COOLI ity Units	NGEnerg Value 329	y Units	H Capacity	EAT RECOVE	RY Energy	Se	eq rder Seq	Demand Limit
ool Equelon Equelon Na EQ	uip Node Ome U	um f nits Va 43	Capaci lue t 8 1	COOLI ity Jnits TONS	NGEnerg Value 329 517	y Units KW	H Capacity	EAT RECOVE	RY Energy	Se On ts Nu	eq cder Seq um Type	Demand Limit
cool Equation Equation Nation EQUATION EQUATION EQU	puip N de 0 mme U 1001S 1	um f nits Va 43 54	Capaci lue t 8 1 4 2	COOLI ity Units TONS	NGEnerg Value 329 517	y Units KW	H Capacity	EAT RECOVE	RY Energy	Se On ts No	eq cder Seq um Type SER	Demand Limit
Cool Equation Co	puip Node O ome U 01001S 1 01001S 1	um f nits Va 43 54 44	Capaci lue t 8 1 2 1	COOLI ity Units TONS TONS	NGEnerg Value 329 517 517	y Units KW KW KW	H Capacity	EAT RECOVE	RY Energy	Se On ts No	eq cder Seq um Type SER	Demand Limit

Card	63			Cooling Pu	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
1	29.8	KM	22.4	KW					1	
2	18.7	KW	29.8	KW					2	2
3			29.84	KW					2	
4	11.2	KM	14.9	KM					3	
7									4	
8	3.7	KW							5	

Card	64			Cooli	ng Equip	ment Optic	ns			
Cool	Max	Load		Free		Cond	Cond	Cond Rej	Cond Rej	Cond Rej
Ref	CW	Shed	Evap	Cooling	Heat	Entering	Min Oper	To Ref	To Ref	@ HW
Num	Reset	Economizer	Precool	Туре	Source	Temp	Temp	Type	Number	Temp
1	10					85	55			
2	10					85	55			
3	10					85	55			
4	10					85	5 5			

Card 65					Heating	Load Assign	ment				
Load	All Coil										
Assignment	Loads To	-Group	1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1	1								
2	3	,2	8								
3	5	9	10								
4	6	11	11								
5	7	12	12								
6	8	13	14								

Card 67					Неа	ting Equi	pment Par	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILERWT	1	29.8	KW	5317	MBH	7500	MBH	1					
2	BOILERWT	1	0	KW	4336	MBH	5800	MBH	2					
3	BLR2MOD	1	11.2	KW	5912	MBH	8369	MBH	1			1		
4	BLR2MOD	1	11.2	KW	5912	MBH	8369	MBH	2			3		
5	BOILERWT	1	5.6	KW	3636	MBH	5000	MBH						
6	EQ2263	1	0	KW			153.3	KW						
7	BOILERWT	1	0.2	KW	427.1	MBH	602	MBH				4		
8	BOILERWT	1	3.7	KW	381.8	MBH	525	MBH						

Card 69			Fan	Equipment	Paramete	ers			
System									
Set	Cooling	Heating	Ret	urn Exl	haust A	Auxiliary	Room	Optional	

Number Fan Fan Fan Supply Exhaust Ventilation

1 TYPFAN

Card 69			Fan Equipm	ent Parame	ters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						
9	TYPFAN						
10	TYPFAN						
11	TYPFAN						
12	TYPFAN						
13	TYPFAN						
14	TYPFAN						

Card 70				Fan	Equip	ment K	W Over	rides				
		MAIN S	YSTEM-		OTH	ER SYS	TEM	E	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan .	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	134.2	:										
2	33.6											
3	33.6											
4	33.6											
5	33.6											
6	2.2											
7	7.5											
8	7.5											
9	70.8											
10	3.7											
12	9.3											
13	1.9											
14	0.4											

Card 71-			Base	Utility F	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Туре	Number	Number	Temp	Temp
1	PIPE-PUMP HT LOS	14.8	TONS	FTSAMCLG	CHILL-LD	1			
2	PIPE HT LOSS	20.2	MBH	FTSAMHTG	HOT-LD	1			
3	PIPE-PUMP HT LOS	25.8	TONS	FTSAMCLG	CHILL-LD	2			
4	PIPE HT LOSS	225.6	MBH	FTSAMHTG	HOT-LD	3			
5	PIPE-PUMP HT LOS	7.4	TONS	FTSAMCLG	CHILL-LD	4			

Card 42	!			Fan	SP ar	nd Duct F	arameters	;			
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
2	1.0										
3	1.0										
4	1.0										
5	1.0										
6	1.0										
7	1.0										
8	1.0										
9	1.0										
10	1.0										
11	1.0										
12	1.0										
13	1.0										
14	1.0										

Card 45				Equ	ipment Sche	dules				
System	Main		Direct	Indirect	Auxiliary	Main	Main			Auxiliary
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
1	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
2	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
3	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
4	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
5	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
6	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
7	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
8	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
9	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
11	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
12	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
13	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
14	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

------ Equipment Section Alternative #3 ------

ef Card 6 Cool E Ref C Jum N	Cool Ref 1 S2 Equip	Sizing			-Group 2 Begin End									
ard 6 cool E ef C um N E	1 52 Squip				. Begin End	d Begin 1	End Begin	End F	Begin End	l Begin	End Begin	n End 1	Begin	End Begin
ard 6 cool E ef C fum N E	52 Squip			1 14										
ol E f C m N E	Equip													
ef C um N E E					Co			rameter	rs					
E m	coae				OLING				AT RECOVE	RY		Seq		Demand
E	Jame		_	acity		ergy	-	acity		Energy		Order	-	Limit
Е	Q1008L	Units '	value 570	TONS	Value 313	Units	Value	Units	s Va	lue U	Inits	Num	Type	Number
	Q1008L		570 570	TONS	313	KW KW						1		
	Q1000E		438	TONS	334.5	KW						2 3		
					- Cooling									
					ENSER Full Load					G-1 3	G - 1 '	•		
um V		Units		Value	Units	Value	Units			Cold	Cooling			
	29.8	KW		29.8	KW	value	Units		Control	Scorage	Tower 2	Access	•	
	29.8	KW		29.8	KW						2			
2	29.8	KW		22.4	KW						1			
ard 7	71				Base	Utility 1	Parameters	:					_	
ase tilit umber	Base Ty Utilit Descri	y ip		Hourly Demand Value	Units	Schedule Code	Energy Type	Equip Refer Numbe	p De rence Li	mand				
ase tilit umber	Base Ty Utility The Description The Distriction	y p BUTION 1	LOS	Hourly Demand Value 55.6	Hourly Demand Units TONS	Schedule Code FTSAMCLG	Energy Type CHILL-LD	Equip Refer Numbe	o De rence Li er Nu	emand miting umber	Entering Temp	Leaving Temp	g	
ase tilit umber	Base Ty Utility The Description The Distriction	y p BUTION 1	LOS	Hourly Demand Value 55.6	Hourly Demand Units TONS	Schedule Code FTSAMCLG	Energy Type CHILL-LD	Equip Refer Numbe	p De rence Li er Nu	emand miting umber	Entering Temp	Leaving Temp	g	
ase tilit umber	Base Ty Utility Description DISTR:	EY EP EBUTION :	Los	Hourly Demand Value 55.6	Hourly Demand Units TONS Condenser Energy	Schedule Code FTSAMCLG	Energy Type CHILL-LD	Equip Refer Number 1	p De rence Li er Nu rs Number	emand miting mber	Entering Temp	Leaving Temp	g 	
ase tilit umber ard 7	Base Ty Utilit Description DISTR	EY EP EBUTION :	LOS	Hourly Demand Value 55.6	Hourly Demand Units TONS Condenser Energy	Schedule Code FTSAMCLG / Cooling Energy	Energy Type CHILL-LD	Equip Refer Numbe	p De rence Li er Nu rs Number	emand miting umber Percer Airflo	Entering Temp	Leaving Temp	g spd rgy	
ase tilit umber	Base Ty Utility The Description DISTR: 74 Cooling Tower	EY EBUTION Capac	LOS	Hourly Demand Value 55.6	Hourly Demand Units TONS Condenser Energy Consump	Schedule Code FTSAMCLG / Cooling Energy Consump	Energy Type CHILL-LD g Tower Pa	Equip Refer Number 1	p Derence Li er Nu rs Number	emand miting umber Percer Airflo	Entering Temp nt Low Spo w Energy	Leaving Temp	g spd rgy	

	All Coil	Cooli	ng														
sgn	Loads To	Equip	ment	-Group	0 1-	-Group 2-	-Group	3Group	o 4-	-Group	5-	-Group	6Gr	oup 7-	-Group	8	Group
ef	Cool Ref					Begin End											
-	1				14			-		_		-					- 3
						Co		ipment Pa	ramet	ers							
		Num				LING			H	EAT REC	OVER	<i></i>		Seq		Demar	ıd
	Code	Of	-	pacity-		Ene:		Cap	acity.	- ~		Energy		Order	Seq	Limit	:
		Units				Value	Units	Value	Unit	ts	Valu	ie U	nits	Num	Type	Numbe	er
	-	1	570	TONS		313	KW							1			
	EQ1009	1	570	TONS		313	KW							2			
3	EQ1001S	1	438	TONS	S	334.5	KW							3			
ool ef	CHILLEI	WATER	Load		CONDE	Cooling Pour NSER Full Load Units	HT R	EC or AUX	Load	Switch over	 Co	old	Cooling	Misc.			
	29.8	KW		29.8		KW	value	Units		Contro	1 5	corage	Tower 2	Access	3.		
	29.8	KW		29.8		KW							2				
	29.8	KW		22.4		KW							1				
`ard	71					Page 1	Meilie. T										
ase	Base			Hour		Base 1	ociticy F	arameters	Equ		Dem						
	ty Utilit	·y		Dema	-	•	Schedule	Energy	_	_		*	Enterina	Leavi	200		
Numbe	-	-		Valu			Code	Type	Numl		Num		Temp	Temp	19		
L		BUTION	LOS					CHILL-LD		001	110110	JG1	remp	remp			
						Condenser		Tower Pa	ramet				t Low S				
Card						Energy				114111	~~-	~ ~ ~ ~ ~ ~ ~ .	L LUW D	-u ποι			
	Cooling			Capaci			Energy Consump	Fluid	Томе				-	· -	-		
ower.	Cooling Tower	Capa	city	_	ity	Consump	Consump		Towe:	r Of		Airflo	w Energ	_	ergy		
	Cooling		city	Capaci Units	ity	Consump Value		Fluid Type	Towe:	r Of		Airflo	-	_	-		

TT+ i 7 i + 1			Hourly	Hourly			Equip	De	mand			
OCTITICA	y Utility	Y	Demand	-	Schedul	e Energy			miting E	nterina	Leaving	
Number	Descri	•	Value	Units	Code	Type	Number			emp	Temp	
8	PIPE H	T LOSS	14.8	MBH		G HOT-LD			-			
9	PIPE-P	UMP HT LOS	0.1	TONS	FTSAMCL	G CHILL-I	D 6					
10	PIPE H	T LOSS	15.8	MBH	FTSAMHT	G HOT-LD	7					
11	PIPE-P	UMP HT LOS	0.8	TONS	FTSAMCL	G CHILL-I	D 7					
12	PIPE H	T LOSS	12.6	MBH	FTSAMHT	G HOT-LD	8					
13	PIPE-P	UMP HT LOS	1.8	TONS	FTSAMCL	G CHILL-I	.D 8					
Card 74	4			Condense	r / Cooli	ng Towar I	la vamen e ve	_				
cara /a	Cooling			Energy	Energy	ng lower F	arameters					
Tower	_	Capacity	Capacity			Fluid	Tower			Energy	d Low Spd	
Ref	Code	Value	Units	Value	Units	Type	Type		Low Spd			
	EQ5100			14.92	KW	*150	1,00	1	50 Spa	7.46	Units KW	
	EQ5100			52.22	KW			2	50	7.40	KH	
	EQ5100			14.9	KW	T-WATER	CTOWER		50	7.4	KW	
_										-		
	EQ5200			3.7	KW	T-WATER	CNDFAN	1				
4	EQ5200 EQ5200			3.7 5.6	KM	T-WATER T-WATER	CNDFAN					
4												
4 5	EQ5200			5.6	KW	T-WATER	CNDFAN	1				
4 5 Card 75	EQ5200			5.6	KW	T-WATER	CNDFAN	1	 #3			
4 5 Card 75	EQ5200 5		Energy So	5.6	KW - Miscell 2	T-WATER	CNDFAN	1		Energ		
4 5 Card 75 # Misc F	EQ5200 5	Energy	Energy So	5.6 # hed E	KW - Miscell 2 quip	T-WATER aneous Acc Energy	CNDFAN essory	1	#3		y Energy	
4 Card 75 # Misc F	EQ5200 5 #1 Equip	Energy Value	Energy Sc	5.6 # hed E	KW - Miscell 2 quip ode	T-WATER aneous Acc	CNDFAN essory	1 Sched	#3 Equip	Energ	y Energy	Sche
4 5 Card 75 # Misc F Ref (EQ5200 5#1 Equip Code	Energy Value	Energy Sc Units Co	5.6 # hed E	KW - Miscell 2 quip ode	T-WATER aneous Acc Energy Value	CNDFAN essory Energy S Units C	1 Sched	#3 Equip	Energ	y Energy	Sche
4 5 Card 75 # Misc F Ref (1 F F 2 F F F F F F F F F F F F F F F F	EQ5200 5 #1 Equip Code EQ5020	Energy Value	Energy Sc Units Co	5.6 # hed E	KW - Miscell 2 quip ode	T-WATER aneous Acc Energy Value	CNDFAN essory Energy S Units C	1 Sched	#3 Equip	Energ	y Energy	Sche
4 5 Card 75 # Misc F Ref () F F F F F F F F F F F F F F F F F F	EQ5200 5 #1 Equip Code EQ5020 EQ5001	Energy Value 11.2 18.7	Energy Sc Units Co KW	5.6 # hed E	KW - Miscell 2 quip ode	T-WATER aneous Acc Energy Value	CNDFAN essory Energy S Units C	1 Sched	#3 Equip	Energ	y Energy	Sche
4 5 5 # Misc F Ref () 1 F 2 F 3 F 4 F	EQ5200 5 #1 Equip Code EQ5020 EQ5001 EQ5240 EQ5020	Energy Value 11.2 18.7	Energy Sc Units Co KW KW KW KW	5.6 	KW - Miscell 2 quip code	T-WATER aneous Acc Energy Value 7.5	CNDFAN essory Energy & Units C	1 Sched Code	#3 Equip	Energ	y Energy	Sche
4 5 5 # Misc F Ref () 1 F 3 F 4 F	EQ5200 5 #1 Equip Code EQ5020 EQ5001 EQ5240 EQ5020	Energy Value 11.2 18.7 7.5 0.2	Energy Sc Units Co KW KW KW KW	5.6 #hed E de C	KW - Miscell 2 quip code Q5240	T-WATER aneous Acc Energy Value 7.5	CNDFAN essory Energy & Units C	1 Sched Code	#3 Equip Code	Energ Value	y Energy Units	Sched Code
4 5 5 # Misc F Ref () 1 F 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	EQ5200 5 #1 Equip Code EQ5020 EQ5020 EQ5020	Energy Value 11.2 18.7 7.5 0.2	Energy Sc Units Co KW KW KW KW	5.6 #hed E de C ion Alte	KW - Miscell 2 quip code Q5240 rnative #	T-WATER aneous Acc Energy Value 7.5	CNDFAN essory Energy & Units C	1 Sched Code	#3 Equip Code	Energ Value	y Energy	Sched Code
Card 75 Misc F Ref () 1 F 2 F 3 F 4 F	EQ5200 5 #1 Equip Code EQ5020 EQ5020 EQ5020 EQ5240 EQ5220	Energy Value 11.2 18.7 7.5 0.2 Equi	Energy Sc Units Co KW KW KW pment Sect	5.6 #hed E de C ion Alte	KW - Miscell 2 quip code Q5240 rnative #	T-WATER aneous Acc Energy Value 7.5	CNDFAN essory Energy & Units C	1 Sched Code	#3 Equip Code	Energ Value	y Energy Units	Sched Code
Card 75 Misc F Ref () 1 F 3 F 4 F	EQ5200 5 #1 Equip Code EQ5020 EQ5020 EQ5020	Energy Value 11.2 18.7 7.5 0.2 Equi	Energy Sc Units Co KW KW KW pment Sect Elec Dema	5.6 #hed E de C ion Alte Equipmen nd Deman ay Limit	KW - Miscell 2 quip code Q5240 rnative #	T-WATER aneous Acc Energy Value 7.5	CNDFAN essory Energy S Units C KW	1 Sched Code	#3 Equip Code	Energ Value	y Energy Units	Sched Code
4 5 6 75 75 75 75 75 75 75 75 75 75 75 75 75	EQ5200 5 #1 Equip Code EQ5020 EQ5020 EQ5020	Energy Value 11.2 18.7 7.5 0.2 Equi	Energy Sc Units Co KW KW KW pment Sect	5.6 #hed E de C ion Alte Equipmen nd Deman ay Limit	KW - Miscell 2 quip ode Q5240 rnative # t Descrip d	T-WATER aneous Acc Energy Value 7.5	CNDFAN essory Energy S Units C KW	1 Sched Code	#3 Equip Code	Energ Value	y Energy Units	Schee Code

COOT					LING					VERY		Seq		De
Ref	Code	Of	Capa	acity	Ene	ergy	Cap	acity-		Energ	y	Order	Seq	Li
Num	Name	Units	Value	Units	Value	Units	Value	Unit	s	Value	Units	Num	Туре	Nu
1	YSCRW22	1	570	TONS	365	KM						1		
2	YSCRW22	1	570	TONS	365	KW						2		
3	EQ1001S	1	438	TONS	334.5	KW						3		
Cool Ref Tum		D WATER- Full L Units KW KW KW	oad l	CONDE Full Load Value 29.8 29.8 22.4 Hourly	Full Load Units KW KW KW	HT: I Full L Value	REC or AUX oad Full: Units Parameters	Load Equi	Switch- over Control	Cold Storage	Cooling Tower 2 2 1	Misc. Access	-	
til	ity Utilit	y		Demand	Demand	Schedule	Energy	Refe	erence	Limiting	Entering	Leavin	a	
Tumb		_		Value	Units	Code	Type	Numb		Number	Temp	Temp	_	
		ip IBUTION	LOS	Value 55.6	Units TONS			Numb					-	
	DISTRI	BUTION		55.6	TONS	FTSAMCLG	Type CHILL-LD	Numb	per	Number	Temp	Temp		
		BUTION		55.6	TONS	FTSAMCLG	Type CHILL-LD	Numb	ers	Number	Temp	Temp		
ard	DISTR1	BUTION		55.6	TONS Condenser Energy	FTSAMCLG	Type CHILL-LD	Numb	ers Numb	Number	Temp	Temp	 Spd	
ard owe:	DISTRI 74 Cooling	BUTION	tty (55.6	TONS Condenser Energy Consump	FTSAMCLG / Coolin	Type CHILL-LD	Numb	ers Numb	Number Der Perce	Temp	Temp od Low r Ene:	 Spd rgy	
ard owe	DISTRI 74 Cooling r Tower	Capac	tty (55.6 Capacity Units	TONS Condenser Energy Consump	FTSAMCLG / Coolin Energy Consump	Type CHILL-LD g Tower Pa:	Numb	ers Numb	Number Der Perce	Temp ent Low Sp low Energy	Temp	 Spd rgy	
dard 'owe	74 Cooling Tower Code EQ5100 EQ5100	Capac Value	city (55.6 	TONS Condenser Energy Consump Value 14.92 52.22	/ Coolin Energy Consump Units KW	Type CHILL-LD g Tower Pa: Fluid Type	Numb	Number Of Cell	Number Der Perce Airf	Temp ent Low Sp ow Energy Spd Value	Temp od Low ' Ene	 Spd rgy	
Card Cowe	74 Cooling Tower Code EQ5100 EQ5100	Capac Value	eity (55.6 Capacity Units	TONS Condenser Energy Consump Value 14.92 52.22 on Altern	/ Coolin Energy Consump Units KW KW	Type CHILL-LD g Tower Pa: Fluid Type	Numb	Pers Numb C Of Cell 1 2	Number Perce Airf: .s Low 8	Temp ent Low Sp tow Energy Spd Value 7.46	Temp od Low r Ene: Uni: KW	Spd rgy ts	
Card Cowe def	74 Cooling Tower Code EQ5100 EQ5100	Capac Value	eity (55.6 Capacity Units	Condenser Energy Consump Value 14.92 52.22 on Altern Equipment d Demand	/ Coolin Energy Consump Units KW KW	Type CHILL-LD g Tower Pa: Fluid Type	Numb	Pers Numb C Of Cell 1 2	Number Perce Airf: .s Low 8	Temp ent Low Sp tow Energy Spd Value 7.46	Temp od Low / Ene: Uni: KW	Spd rgy ts	
owe:	74 Cooling r Tower Code EQ5100 EQ5100	Capac Value	Equipor	55.6 Capacity Units ment Secti	Condenser Energy Consump Value 14.92 52.22 on Altern Equipment d Demand y Limit	/ Coolin Energy Consump Units KW KW Dative #3	Type CHILL-LD g Tower Pa: Fluid Type	Numb 1 Tower Type	Number Of Cell 1 2	Number Perce Airf: .s Low 8	Temp ent Low Sp tow Energy Spd Value 7.46	Temp od Low / Ene: Uni: KW	Spd rgy ts	

_	1 14	i Begin Er	ad Begin	p 3Gro End Begi	oup 4- .n End	-Group S Begin Er	iGroup nd Begin	p 6Gro End Begi	oup 7 in End E	Group Segin I	8Group End Begin
Num	1 14	i Begin Er	ad Begin	End Begi	n End	Begin Er	d Begin	p 6Gro End Begi	oup 7 in End E	Group Segin I	8Group End Begin
Num				and begi	.ii bilu	begin Er	ia Begin	End Begi	in End E	egin I	End Begin
140111		· (
140111	CC	-	Cooling E	quipment P	aramete	ers					
Of0		OL1NG			HE	EAT RECOV	ERY		Seq		Demand
	Capacity	En	ergy	Ca	pacity-		Energy	/	Order		
	lue Units	Value	Units	Valu	e Unit	s v	alue t	Jnits		_	Number
		3762	MBH						1		
	-		MBH						2		
1 430	o TONS	334.5	KW						3		
		- Cooling	Pumps and	l Referenc	es						
LED WATER	COND	ENSER	HT	REC or AU	X	Switch-					
ad Full Load	l Full Load	Full Load	d Full I	oad Full	Load	over	Cold	Cooling	Misc		
Units	Value	Units					Storage	_			
KW	29.8	KW					_	2			
	29.8	KW						2			
KW	22.4	KW						1			
=	Hourly	Hourly			Equi	p De	emand				
-								Entering	Leaving		
-						er N	ımber	Temp	Temp		
		Condonace									
ıg				g Tower Pa	ıramete						
Capacity	Capacity			Fluid	Towar					-	
Value	Units								_	-	
)			KW	-150	1700					1	
•		52.22	KW			2	50	7.46	KW		
	IN 1 57% I 438 LED WATER ad Full Load Units KW KW KW KW Crip TRIBUTION LOS TRIBUTION LOS	ELED WATERCOND ad Full Load Full Load Units Value KW 29.8 KW 29.8 KW 22.4 Hourly Demand Crip Value TRIBUTION LOS 55.6	1	N 1 570 TONS 3762 MBH 1 438 TONS 334.5 KW Cooling Pumps and Full Load Full I Whits Value KW 29.8 KW KW 29.8 KW KW 22.4 KW Cooling Walue Units Value Cooling Pumps and Full Load Full Lo	IN 1 570 TONS 3762 MBH IN 1 570 TONS 5762 MBH IN 1 570 TONS 5762 MBH IN 1 570 TONS FTSAMCLG CHILL-LI IN 1 570 TONS FTSAMCLG CHILL	IN 1 570 TONS 3762 MBH IN 1 570 TONS 5762 MBH IN 1 570 TONS FTSAMCLG CHILL-LD 1 IN 1 570 TONS FTSAMCLG C	IN 1 570 TONS 3762 MBH IN 1 570 TONS STEEL MBH IN 1 570 TONS SWITCH IN 2 SWITCH IN 2 SWITCH IN 2 SWITCH IN 1 SWITCH IN 2 SWITCH IN 2 SWITCH IN 2 SWITCH IN 3 SWITCH IN 1 SWITCH IN 2 SWITCH IN 3 SWITCH IN 1 SWITCH IN 1 SWITCH IN 2 SWITCH IN 3 SWITCH IN 1 SWITC	No. 1 570 TONS 3762 MBH No. 1 438 TONS 334.5 KW	No. 1 570 TONS 3762 MBH No. 1 570 TONS S762 MBH No. 1 570 TONS SWITCH No. 1 570 TONS SWITCH No. 1 570 TONS SWITCH No. 1 570 TONS STORM TONS SWITCH No. 1 570 TONS SWITCH NO. 1	1	1 570 TONS 3762 MBH

Card 65				Heating	Load Assign	ment				
Load	All Coil									
Assignment	Loads To	-Group 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1 14								

Card 67	'				Неа	ting Equi	pment Pa	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BOILHEFT	1	5.6	KW	1830	MBH	2000	MBH	1					
2	BOILHEFT	1	5.6	KW	1830	MBH	2000	MBH	2					
3	BOILHEFT	1	5.6	KW	1830	MBH	2000	MBH	3					
4	BOILHEFT	1	5.6	KW	1830	MBH	2000	MBH	4					

Card 71-			Base	Utility Pa	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Туре	Number	Number	Temp	Temp
1	DISTRIBUTION LOS	294.8	MBH	FTSAMHTG	HOT-LD	1			

Utility Description Reference Table

Schedules:

AVAIL AVAILABLE (100%)

BARRSCHD COOLING FAN SCHEDULE CODE FOR BARACKS

CRCHSCHD COOLING FAN SCHEDULE CODE FOR CHURCH

DAYSCHED COOLING FAN SCHEDULE CODE

DNGFANSC COOLING FAN SCHEDULE CODE FOR DINING

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHCHAPL F.S.H. CHAPEL LIGHTING SCHEDULE

FSHCHAPP F.S.H. CHAPEL PEOPLE SCHEDULE

FSHDINL F.S.H. BARRACKS DINING LIGHTING SCHED

FSHDINP F.S.H. BARRACKS DINING PEOPLE SCHED

FSHGROCL F.S.H. GROCERY/RETAIL LIGHT SCHEDULE

FSHGROCP F.S.H. GROCERY/RETAIL PEOPLE SCHEDULE

FSHKITCH F.S.H. KITCHEN INTERNAL LOAD SCHEDULE

FSHLGEL F.S.H. LOUNGE LIGHTING SCHEDULE

FSHLGEP F.S.H. LOUNGE PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FSHTHEAL F.S.H. THEATRE LIGHTING SCHEDULE

FSHTHEAP F.S.H. THEATRE PEOPLE SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

THESCHED COOLING FAN SCHEDULE CODE FOR THEATRE

System:

BPMZ BYPASS MULTIZONE SYSTEM

FC FAN COIL SYSTEM

SZ SINGLE ZONE SYSTEM

VRH VARIABLE VOLUME WITH REHEAT

Equipment:

Cooling:

EQ1001S 2-STG CENTRIFUGAL CHILLER <550 TONS

EQ1008L 3-STG CENTRIFUGAL > 300 TONS

EQ1009 3-STG CTV WITH VARIABLE FREQUENCY DRV

EQ1070L RECIPROCATING > 30 TONS

EQ1170S AIR-CLD COND COMP <22 TONS

EQ1172S · AIR-CLD COND COMP <55 TONS

EQ1288L AIR TO AIR HEAT PUMP >11 TONS

Heating:

BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE

BOILERWT WATERTUBE BOILER

EQ2263 ELECTRIC RESISTANCE HEAT WITH FAN

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

EQ5200 CONDENSER FANS

Misc:

EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME

EQ5020 HEATING WATER CIRCULATION PUMP

EQ5240 BOILER FORCED DRAFT FAN

Schedule Name: AVAIL
Project: AVAILABLE (100)

Location:

Client: VERSION 3.0

Program User: C.D.S. MARKETING
Comments: BUILDING TEMPLATE SERIES

Starting Month: JAN Ending Month: HTG

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

-

Schedule Name: BARRSCHD

Project: COOLING FAN SCHEDULE CODE FOR B

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

---- ------

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

0 100

8 0

17 100

Schedule Name: CRCHSCHD

Project: COOLING FAN SCHEDULE CODE FOR C

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent

----0 0 7 100

16 0

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

0

0

24

Starting Month: JAN Ending Month: DEC

Hour Util Percent

----0 0

6 100

16 0

Schedule Name: DAYSCHED

Project: COOLING FAN SCHEDULE CODE

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent 0 0 6 100 17 0

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
12	100
16	0
24	

Schedule Name: DNGFANSC

Project: COOLING FAN SCHEDULE CODE FOR D

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SAT

Hour Util Percent 0 0

4 100

21 0

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0	0
12	100

0

Schedule Name: FSHBARRL

Project: F.S.H. BARRACKS LIGHT\MISC. SCH Location: F.S.H. - SAN ANTONIO TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC.

Comments: LIGHT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

5 0

17 80

22

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

5 0

8 50

5 22

Schedule Name: FSHBARRP

Project: F.S.H. BARRACKS PEOPLE SCHEDULE

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.
Comments: PEOPLE SCHEDULE FOR BARRACKS

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0	100
8	0
17	80

100

22

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

-- ------

0 50

Schedule Name: FSHCHAPL

Project: F.S.H. CHAPEL LIGHTING SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH Program User: HUITT-ZOLLARS, INC. Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0	0
19	100

0

20 24

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

0 0

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0	0

9 100

12

Schedule Name: FSHCHAPP

Project: FSH CHAPEL PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0
19 15
20 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

0 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0
9 80
12 0

Schedule Name: FSHDINL

Project: F.S.H. BARRACKS DINING LIGHTING

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: LIGHTING SCHEDULE FOR DINING

Starting Month: JAN Ending Month: DEC

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

---- --------

0 0

5 100

19 0

Schedule Name: FSHDINP

Project: F.S.H. BARRACKS DINING PEOPLE S

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC. Comments: PEOPLE SCHEDULE FOR DINING

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC Starting Day Type: WKDY Ending Day Type: SUN

100

Hour Util Percent ----0 0

9 0

11 100 14 0

17 100 19 0

24

Schedule Name: FSHGROCL Project: F.S.H. GROCERY Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour	Util Percent
0	0
11	100
20	0

Schedule Name: FSHGROCP Project: F.S.H. GROCERY Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH Program User: HUITT-ZOLLARS, INC. Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent 0 100

24

Starting Month: JAN Ending Month: DEC Starting Day Type: WKDY Ending Day Type: WKDY

lour	Util Percent
0	0
11	10
17	100
20	0
24	

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT $\ \$ Ending Day Type: SUN

Hour	Util Percent
0	0
11	50
20	0
24	

Schedule Name: FSHKITCH

Project: F.S.H. KITCHEN INTERNAL LOAD SC Location: F.S.H. - SAN ANTONIO TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.
Comments: PEOPLE SCHEDULE FOR KITCHEN

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

---- ------

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

--- ------

0 0

4 100

21 0

Schedule Name: FSHLGEL

Project: F.S.H. LOUNGE LIGHTING SCHEDULE

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.
Comments: LIGHTING SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

....

0 0

19 100

21 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

--- ------

0 0

19 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FSHLGEP

Project: F.S.H. LOUNGE PEOPLE SCHEDULE

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: PEOPLE SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0

19 15

21 0

24

Starting Month: JAN Ending Month: DEC Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

0 0

19 75

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

----0

Schedule Name: FSHOFFIC

Project: F.S.H. OFFICE INTERNAL LOAD SCH Location: F.S.H. SAN ANTONIO, TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC. - JTC, Comments: ALL INTERNAL LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FSHTHEAL

Project: F.S.H. THEATRE LIGHTING SCHEDUL

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0

8 100

10 0

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

0 0
19 100
21 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent
--- 0 0
24

Schedule Name: FSHTHEAP

Project: F.S.H. THEATRE PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent 0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent ---- 0 0 8 25

10 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

0 0

19 75 21 0

24

Starting Month: JAN Ending Month: DEC Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FTSAMCLG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH, Program User: HUITT-ZOLLARS, INC.

Comments: CHILLER SCHEDULE

Starting Month: JAN Ending Month: APR
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: MAY Ending Month: OCT
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

--- ------

0 100

24

Starting Month: NOV Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

....

0 0

Schedule Name: FTSAMHTG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH,

Program User: HUITT-ZOLLARS, INC.

Comments: BOIELR SCHEDULE

Starting Month: JAN Ending Month: APR

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent ____

0 100

24

Starting Month: MAY Ending Month: OCT Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: NOV Ending Month: DEC Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

```
Schedule Name: THESCHED
```

Project: COOLING FAN SCHEDULE CODE FOR T

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent

0 0

6 100 14 0

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

--- -------

0 0

14 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0

Utility Description Reference Table

Schedules:

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHCHAPL F.S.H. CHAPEL LIGHTING SCHEDULE

FSHCHAPP F.S.H. CHAPEL PEOPLE SCHEDULE

FSHDINL F.S.H. BARRACKS DINING LIGHTING SCHED

FSHDINP F.S.H. BARRACKS DINING PEOPLE SCHED

FSHGROCL F.S.H. GROCERY/RETAIL LIGHT SCHEDULE

FSHGROCP F.S.H. GROCERY/RETAIL PEOPLE SCHEDULE

FSHKITCH F.S.H. KITCHEN INTERNAL LOAD SCHEDULE

FSHLGEL F.S.H. LOUNGE LIGHTING SCHEDULE

FSHLGEP F.S.H. LOUNGE PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FSHTHEAL F.S.H. THEATRE LIGHTING SCHEDULE

FSHTHEAP F.S.H. THEATRE PEOPLE SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

System:

BPMZ BYPASS MULTIZONE SYSTEM

FC FAN COIL SYSTEM

SZ SINGLE ZONE SYSTEM

VRH VARIABLE VOLUME WITH REHEAT

Equipment:

Cooling:

EDC80TON ENGINE DRIVEN CHILLER, 80 TONS

EQ1001S 2-STG CENTRIFUGAL CHILLER <550 TONS

EQ1070L RECIPROCATING > 30 TONS

EQ1170S AIR-CLD COND COMP <22 TONS

EQ1172S AIR-CLD COND COMP <55 TONS

EQ1288L AIR TO AIR HEAT PUMP >11 TONS

YSCRW22 YORK W.C. SCREW CHILLER

Heating:

BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE

BOILERWT WATERTUBE BOILER

BOILHEFT HIGH EFFICIENCY MODULAR FIRETUBE BOIL.

EQ2263 ELECTRIC RESISTANCE HEAT WITH FAN

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

EQ5200 CONDENSER FANS

Misc:

EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME

EQ5020 HEATING WATER CIRCULATION PUMP

EQ5240 BOILER FORCED DRAFT FAN

03-0185.06 EEAP BOILER-CHILLER STUDY FT. SAM HOUSTON - SAN ANTONIO, TX. CORPS OF ENGINEERS - FT. WORTH, TEXAS HUITT - ZOLLARS INC. AREA 1300

Weather File Code:

 Location:
 SAN ANTONIO, TEXAS

 Latitude:
 29.0 (deg)

 Longitude:
 98.0 (deg)

 Time Zone:
 6

 Elevation:
 792 (ft)

 Barometric Pressure:
 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4.751.9 (Btu-min./hr/cuft)

Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 17:29: 8 2/26/96
Dataset Name: FSH1300 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1 EXISTING AIRSIDE EQUIPMENT

System Totals

Percent	Cool	ing Loa	d	Heatin	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	96.4	9	382	-640,919	48	1,262	31,312.7	0	0	0.0	0	0
5 - 10	192.9	5	239	-1,281,837	14	366	62,625.3	0	0	0.0	0	0
10 - 15	289.3	9	418	-1,922,756	8	203	93,938.0	0	0	0.0	0	0
15 - 20	385.8	12	511	-2,563,674	6	153	125,250.7	0	0	0.0	0	0
20 - 25	482.2	11	499	-3,204,593	6	147	156,563.4	0	0	0.0	0	0
25 - 30	578.7	7	302	-3,845,511	7	172	187,876.1	0	0	0.0	0	0
30 - 35	675.1	8	346	-4,486,430	3	87	219,188.7	0	0	0.0	0	0
35 - 40	771.6	6	284	-5,127,349	7	176	250,501.4	0	0	0.0	0	0
40 - 45	868.0	8	367	-5,768,268	3	68	281,814.1	0	0	0.0	0	0
45 - 50	964.5	7	328	-6,409,187	0	0	313,126.8	0	0	0.0	0	0
50 - 55	1,060.9	8	336	-7,050,105	0	0	344,439.4	0	0	0.0	0	0
55 - 60	1,157.4	5	215	-7,691,024	0	0	375,752.2	0	0	0.0	0	0
60 - 65	1,253.8	2	107	-8,331,942	0	0	407,064.9	0	0	0.0	0	0
65 - 70	1,350.3	2	82	-8,972,860	0	0	438,377.5	0	0	0.0	0	0
70 - 75	1,446.7	0	0	-9,613,778	0	0	469,690.2	0	0	0.0	0	0
75 - 80	1,543.2	0	0	-10,254,698	0	0	501,002.8	0	0	0.0	0	0
80 - 85	1,639.6	0	0	-10,895,616	0	0	532,315.6	64	5,582	0.0	0	0
85 ~ 90	1,736.1	. 0	0	-11,536,537	0	0	563,628.3	4	342	0.0	0	0
90 - 95	1,832.5	0	0	-12,177,456	0	0	594,940.9	0	15	0.0	0	0
95 - 100	1,929.0	0	0	-12,818,373	0	0	626,253.6	32	2,821	0.0	0	0
Hours Off	0.0	0	4,344	0	0	6,126	0.0	0	0	0.0	0	8,760

				Е	QUIP	MENT	ENE	RGY	c o n s	имрт	I O N			
Ref	Equip					Mor	thly Cor	nsumption	1		·			
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	203729	184033	203907	197179	203818	197312	203685	203907	197179	203818	197090	202795	2,398,450
	PK	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	ÞK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	Ϋ́									
	CHILLD	0	0	0	0	11011	10656	11011	11011	10656	11011	0	0	65,357
	PK	0.0	0.0	0.0	0.0	14.8	14.8	14.8	14.8	14.8	14.8	0.0	0.0	14.8
2			BAS	SE UTILIT	Ϋ́									
	HOTLD	150	136	150	145	0	0	0	0	0	0	145	150	877
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
3			BAS	SE UTILIT										
	CHILLD	0	0	0	0	19195	18576	19195	19195	18576	19195	0	0	113,933
	PK	0.0	0.0	0.0	0.0	25.8	25.8	25.8	25.8	25.8	25.8	0.0	0.0	25.8
4			BAS	SE UTILIT	.Y									
	HOTLD	1678	1516		1624	0	0	0	0	0	0	1624	1678	9,800
	PK	2.3	2.3	2.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3

	Ddarb					Mont	hly Con	sumption						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
5			BASE	UTILITY										
	CHILLD	0	0	0	0	5506	5328	5506	5506	5328	5506	0	0	32,67
	PK	0.0	0.0	0.0	0.0	7.4	7.4	7.4	7.4	7.4	7.4	0.0	0.0	7.
6			BASE	UTILITY										
	HOTLD	43	39	43	42	0	0	0	0	0	0	42	43	25
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
7			BASE	UTILITY										
	CHILLD	0	0	0	0	818	792	818	818	792	818	0	0	4,85
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.
8			BASE	UTILITY										
	HOTLD	110	99	110	107	0	0	0	0	0	0	107	110	64
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
9			BASE	UTILITY										
	CHILLD	0	0	0	0	74	72	74	74	72	74	0	0	4.4
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.
.0			BASE	UTILITY										
	HOTLD	118	106	118	114	0	0	0	0	0	0	114	118	68
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0
.1			BASE	UTILITY										
	CHILLD	0	0	0	0	595	576	595	595	576	595	0	0	3,53
	PK	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.
.2			BASE	UTILITY										
	HOTLD	94	85	94	91	0	0	0	0	0	0	91	94	54
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0 .
L3		-	BASE	UTILITY										
	CHILLD	0	0	0	0	1339	1296	1339	1339	1296	1339	0	0	7,94
	PK	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	1.8	0.0	0.0	1.
1	EQ1001S		2-S	TG CENTR	FUGAL	CHILLER .	550 TON	is	F	31dg. 1350	CHW Equip	ment		
	ELEC	0	0	0	0	81732	95090	112236	116974	94822	47411	0	0	548,2
	PK	0.0	0.0	0.0	0.0	315.0	311.6	326.8	330.2	321.9	230.6	0.0	0.0	330
1	EQ5100		COOL	ING TOWER	RFANS									
	ELEC	0	0	0	0	11100	10742	11100	11100	10742	5392	0	0	60,1
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14

Ref					E Q	UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Name Code Jan Feb Mar Apr May June Jule Jule	Ref	Equip					Mor	thly Cor	sumption						
NATER NATER Name Name	Num	Code	Jan	Feb	Mar							Oct	Nov	Dec	Total
PK 0.0 0.0 0.0 0.0 1.0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.0 0.0 0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	1	EQ5100		COOL	ING TOWER	RFANS									
PK		WATER	0	0	0	0	444	523	618	641	520	222	0	0	0.045
ELEC 0 0 0 0 0 0 22171 21456 22171 21456 22171 0 0 0 131,597 PK 0.0 0.0 0.0 0.0 229.8 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 1 EQS010		PK	0.0	0.0	0.0	0.0								_	•
ELEC 0 0 0 0 0 0 22171 21456 22171 21456 22171 0 0 0 131,597 PK 0.0 0.0 0.0 0.0 229.8 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 1 EQS010	1	E05001		CHIL	TED WATER	מושוום כ	- CONCT	AND MOLE	n.c.						
PK		ELEC	0							22171	01.154				
ROSO10 CONDENSER WATER FUMP-CV (HIGH EFFIC.)		PK													
ELEC	1	E05010		COMD	DNODD MAG	on near	D 611/1170								-5.0
PK	_		0												
1												16666	0	0	98,918
ELEC		FK	0.0	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22.4
ELEC	1	EQ5300		CONT	ROL PANEL	& INT	ERLOCKS								
PK 0.0 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0		ELEC	0	0	0	0	744	720	744	744	720	744	0		
2 EQ1001S		PK	0.0	0.0	0.0	0.0	1.0								<u> </u>
ELEC															1.0
PK 0.0 0.0 0.0 0.0 481.2 496.7 503.9 510.2 495.7 411.0 0.0 0.0 510.2 2 EQ5100	2			2-8	TG CENTRI	FUGAL	CHILLER	<550 TON	s Bidgs	. 13/4, /5,	77, 79, 80	CHW Equip	ment (CH	LR-1)	
PK 0.0 0.0 0.0 0.0 481.2 496.7 503.9 510.2 495.7 411.0 0.0 0.0 510.2 2 EQ5100			0	0	0	0	171540	219562	273740	283231	213234	51054	0	0	1,212,362
ELEC 0 0 0 0 0 38852 37598 38852 37598 18871 0 0 210.623 PK 0.0 0.0 0.0 0.0 52.2 52.2 52.2 52.2 52.		PK	0.0	0.0	0.0	0.0	481.2	496.7	503.9	510.2	495.7	411.0	0.0	0.0	L
PK 0.0 0.0 0.0 0.0 0.0 52.2 52.2 52.2 52.2	2	EQ5100		COOL	ING TOWER	FANS									
PK 0.0 0.0 0.0 0.0 52.2 52.2 52.2 52.2 52.		ELEC	0	0	0	. 0	38852	37598	38852	38852	37598	18871	0	0	210 622
WATER 0 0 0 0 764 1039 1348 1416 972 178 0 0 5,717 PK 0.0 0.0 0.0 0.0 0.0 3.3 3.5 4.1 4.1 3.6 2.0 0.0 0.0 0.0 4.1 2 EQ5001		PK	0.0	0.0	0.0	0.0	52.2	52.2							
PK 0.0 0.0 0.0 0.0 0.0 3.3 3.5 4.1 4.1 3.6 2.0 0.0 0.0 0.0 5,717 PK 0.0 0.0 0.0 0.0 0.0 3.3 3.5 4.1 4.1 3.6 2.0 0.0 0.0 0.0 4.1 2 EQ5001	2	EQ5100		COOL	ING TOWER	FANS									
PK 0.0 0.0 0.0 0.0 3.3 3.5 4.1 4.1 3.6 2.0 0.0 0.0 0.0 4.1 2 EQ5001		WATER	0	0	0	0	764	1039	1348	1416	972	170	•		
ELEC 0 0 0 0 13913 13464 13913 13913 13464 13913 0 0 82,579 PK 0.0 0.0 0.0 0.0 18.7 18.7 18.7 18.7 18.7 18.7 0.0 0.0 18.7 2 EQ5010		PK	0.0	0.0	0.0	0.0								_	
ELEC 0 0 0 0 13913 13464 13913 13913 13464 13913 0 0 82,579 PK 0.0 0.0 0.0 0.0 18.7 18.7 18.7 18.7 18.7 18.7 18.7 0.0 0.0 18.7 2 EQ5010	2	EQ5001		CHIL	LED WATER	римр	- CONST	ANT VOLL	ME						
PK 0.0 0.0 0.0 0.0 18.7 18.7 18.7 18.7 18.7 18.7 18.7 0.0 0.0 18.7 2 EQ5010		ELEC	0							12012	12464				
ELEC 0 0 0 0 0 22171 21456 22171 21456 22171 0 0 0 131,597 PK 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 2 EQ5300		PK	0.0	0.0											<u></u>
ELEC 0 0 0 0 22171 21456 22171 21456 22171 0 0 131,597 PK 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 2 EQ5300	2	EQ5010		CONDE	ENSER WAT	ER PUM	P-CV (HTG)	4 FFFTC	١			,			
PK 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8		ELEC	0							22771	21456	00171	_	_	
ELEC 0 0 0 0 744 720 744 740 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0		PK	0.0												
ELEC 0 0 0 0 744 720 744 740 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	2	EQ5300		COMME	OI. DANET	E TAPPE	ישר טייט זמי								
PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0			O					720	244			_			
2 EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 13913 13464 13913 13464 13913 0 0 82,579 PK 0.0 0 0 0 187 2 10 7 20 7															
ELEC 0 0 0 13913 13464 13913 13464 13913 0 0 82,579			0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
ELEC 0 0 0 0 13913 13464 13913 13913 13464 13913 0 0 82,579	2	EQ5001		CHILL	ED WATER	PUMP -	- CONST	ANT VOLU	Æ						
PK 0.0 0.0 0.0 0.0 18.7 10.7 10.7 10.7 10.7 10.7 10.7 10.7 10		ELEC	0							13913	13464	13913	0	^	82 572
		PK	0.0	0.0	0.0										

Ref Equip	•				E (UIP	MENT	ENE	RGY	CONS	UMPTI	O N			
May	Ref	Equip					Mon	thlv Con	sumption						
Second S	Num	Code										Oct	Nov	Dec	Total
Section Control Panel Famel Fa						_	-		•		_				
PK	3	EQ1001S		2-5	STG CENTE	RIFUGAL	CHILLER	<550 TON	S	Bldgs. 1	374, 75, 77	', 79, 80 C	HW Equip	ment (CHL)	R-2)
FK		ELEC	0	0	0	0	2505	14109	33779	42279	7253	0	0	0	99,925
ELEC		PK	0.0	0.0	0.0	0.0	273.4	344.6	499.0	510.2	378.4	0.0	0.0	0.0	
ELEC															
FX	3	EQ5001		CHII	LLED WATE	R PUMP	- CONST	ANT VOLU	ME						
Second Condenser Water Pump-cV(High EFFIC.)		ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
ELEC		PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ELEC															
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	3							H EFFIC.)						
3 EQS300 CONTROL PANEL & INTELLORS ELEC 0 0 0 0 0 44 134 268 287 90 0 0 0 0 0 823 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0					-					8564	2686	0	0	0	24,558
ELEC 0 0 0 0 0 0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	0.0	0.0	0.0	29.8
ELEC 0 0 0 0 0 0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	2	FOERO		G0.17											
FK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	3		0												
## E01001S ## E01				-											
ELEC 0 0 0 0 100842 57348 66943 67437 56086 28155 0 0 376,812 PK 0.0 0.0 0.0 0.0 0.0 100842 57348 66943 67437 56086 28155 0 0 0 376,812 PK 0.0 0.0 0.0 0.0 0.0 195.4 206.9 215.1 194.1 140.9 0.0 0.0 0.0 215.1 4 EQ5100		FK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0
ELEC 0 0 0 0 0 100842 57348 66943 67437 56086 28155 0 0 376,812 PK 0.0 0.0 0.0 0.0 0.0 204.0 195.4 206.9 215.1 194.1 140.9 0.0 0.0 0.0 215.1 4 EQS100 COOLING TOWER FANS ELEC 0 0 0 0 0 11086 10728 11086 11086 10728 4939 0 0 59,652 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9	4	EQ1001S		2-5	STG CENTE	RIFUGAL	CHILLER	<550 TON	s		Bldg. 13	84 CHW	Equipment		
PK 0.0 0.0 0.0 0.0 0.0 204.0 195.4 206.9 215.1 194.1 140.9 0.0 0.0 215.1 4 EQ5100		ELEC	0							67437	56086	28155	0	0	376 812
4 EQ5100		PK	0.0	0.0	0.0	0.0			206.9						L
ELEC															
PK 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9	4	EQ5100		C001	LING TOWE	R FANS									
4 EQ5100		ELEC	0	0	0	0	11086	10728	11086	11086	10728	4939	0	0	59,652
WATER 0 0 0 0 476 245 293 292 236 121 0 0 1,663 PK 0.0 0.0 0.0 0.0 0.0 0.9 0.9 1.0 1.0 0.9 0.7 0.0 0.0 1.0 4 EQ5001		PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
WATER 0 0 0 0 476 245 293 292 236 121 0 0 1,663 PK 0.0 0.0 0.0 0.0 0.0 0.9 0.9 1.0 1.0 0.9 0.7 0.0 0.0 1.0 4 EQ5001															
PK 0.0 0.0 0.0 0.0 0.0 0.9 0.9 1.0 1.0 0.9 0.7 0.0 0.0 1.0 4 EQ5001	4		_												
4 EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 0 8333 8064 8333 833 8064 8333 0 0 49,459 PK 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.															1,663
ELEC 0 0 0 0 8333 8064 8333 8064 8333 0 0 49,459 PK 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.		PK	0.0	0.0	0.0	0.0	0.9	0.9	1.0	1.0	0.9	0.7	0.0	0.0	1.0
ELEC 0 0 0 0 8333 8064 8333 8064 8333 0 0 49,459 PK 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.	4	E05001		СНТІ	יייבש מיינו	מאוזם סי	- CONST	אאידי זיירו	ME						
PK 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.2 11	•		0							0222	9064	0222	•		<u> </u>
4 EQ5010 CONDENSER WATER PUMP-CV(HIGH EFFIC.) ELEC 0 0 0 0 0 11086 10728 11086 10728 11086 0 0 65,798 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9 4 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 744 720 744 740 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 0.0 0															L
ELEC 0 0 0 0 11086 10728 11086 10728 11086 0 0 65,798 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9 4 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 744 720 744 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 0.0 0					***	0.0	11.2		11.2	14.2	11.2	11.2	0.0	0.0	11.2
ELEC 0 0 0 0 11086 10728 11086 10728 11086 0 0 65,798 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 4 EQ5300	4	EQ5010	•	CONI	DENSER WA	ATER PUM	P-CV(HIG	H EFFIC.	}						
PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9 4 EQ5300		ELEC	0							11086	10728	11086	0	0	65.798
4 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 744 720 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 0.0 0		PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9				_		L
ELEC 0 0 0 0 744 720 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0															
PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	4	EQ5300		CON	TROL PANE	EL & INT	ERLOCKS								
5 EQ1288L AIR TO AIR HEAT PUMP >11 TONS Bldg. 1387 CHW Equipment		ELEC	0	0	0	Ó	744	720	744	744	720	744	0	0	4,416
5 EQ1288L AR TO AIR HEAT PUMP >11 TONS		PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
5 EQ1288L AIR TO AIR HEAT PUMP >11 TONS										BIA	o 1387 CH	W Fauir	nent		
	5			AIR	TO AIR F	EAT PUM	P >11 TO	NS		DIG	6. 1307 CI	Lyuipi			
333,500		ELEC	27947	26164	31734	31505	21894	27497	34761	35552	25007	10217	30771	30456	333,506
PK 84.5 87.3 84.4 84.4 96.4 106.6 118.7 123.0 103.2 70.1 84.4 84.4 123.0		PK	84.5	87.3	84.4	84.4	96.4	106.6	118.7	123.0	103.2	70.1	84.4	84.4	123.0

				E Q	UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5	EQ5210		COND	ENSER FAI	NS-ROOF	TOP CHIL	LER							
	ELEC	0	0	0	0	1553	1894	2810	2456	1793	704	0	0	11,209
	PK	0.0	0.0	0.0	0.0	7.1	7.7	11.8	11.8	7.7	5.0	0.0	0.0	11.8
5	EQ5306		CONT	ROLS									-	
	ELEC	34	32	37	36	37	36	37	37	36	37	36	37	424
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
_						7					Equipment			0.1
6	EQ1170S ELEC	•		CLD COND					-		•			
	PK	0.0	0.0	0.0	0.0	906	1531	2481	2599	1383	87	0	0	8,987
	110	0.0	0.0	0.0	0.0	8.4	9.6	10.2	10.1	9.4	7.5	0.0	0.0	10.2
6	EQ5200		COND	ENSER FAI	1 S									
	ELEC	0	0	0	0	93	156	298	268	144	7	0	0	966
	PK	0.0	0.0	0.0	0.0	0.9	1.0	1.0	1.0	1.0	0.7	0.0	0.0	1.0
6	EQ5313		CONT	ROLS										
	ELEC	0	0	0	0	146	169	195	195	162	112	0	0	0.70
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
7	EQ1172S		ATR-	CLD COND	COMP ~	EE TONG								
	ELEC	0	0	0	0	3539	7758	12352	12858	5872	0	0	0	[10 200
	PK	0.0	0.0	0.0	0.0	54.3	60.8	64.3	63.8	59.4	32.5	0.0	0.0	64.3
7	EQ5200		2017											
,	ELEC	0	0	ENSER FAN 0	4S 0	225	476							
	PK	0.0	0.0	0.0	0.0	3.3	476 3.6	898 3.7	767 3.7	366	2.0	0.0	0.0	2,733
						3.5		3.7	3.7	3.0	2.0	0.0	0.0	3.7
7	EQ5313		CONT											
	ELEC	0	0	0	0	62	115	146	146	87	0	0	0	556
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
8	EQ1070L	•	RECI	PROCATING	3 > 30 7	rons			Bldg. 139	8 CHW E	quipment			
	ELEC	0	0	0	0	6959	10933	15674	16733	9821	2476	0	0	62,597
	PK	0.0	0.0	0.0	0.0	61.2	66.1	69.9	70.7	68.9	37.4	0.0	0.0	70.7
8	EQ5200		COND	ENSER FAN	IS									
	ELEC	0	0	0	0	579	910	1580	1391	813	207	0	0	5,481
	PK	0.0	0.0	0.0	0.0	5.4	5.6	5.6	5.6	5.6	3.4	0.0	0.0	5.6
8	EQ5001		CULT			gave		_						
b	ELEC	0	CHILL	LED WATER 0	PUMP - 0	- CONSTA 2753	ANT VOLU		0.555					
	PK	0.0	0.0	0.0	0.0	3.7	3.7	2753	2753	2664	2753	0	0	16,339
		•••	0	٠.٠	5.0	L 3./	3.1	3.7	3.7	3.7	3.7	0.0	0.0	. 3.7

				Е	QUIP	MENT	ENE	RGY	cons	имрт	I O N			
Ref	Equip					Mor	thle Con							
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
8	EQ5011		CON	DENSER W	ATER PUM	IP-CV (MED	IUM EFFI	(C.)						
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	_
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	EQ5302		CON	TROLS										
	ELEC	0	0	0	0	74	72	74	74	72	74	0	0	[442]
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
1	TYPFAN		GEN	ERIC FAN	ī				Bldg. 135() Airside Fa	ans	1		
	ELEC	49128	46959	99529	96289	32441	34006	37289	36657	32966	31756	96294	55299	640, 612
	PK	134.2	134.2	134.2	134.2	134.2	128.2	130.3	131.5	134.0	133.4	134.2	134.2	134.2
2	TYPFAN		GEN	ERIC FAN						4 Airside F		131.2	137.2	134.2
	ELEC	24998	22579	24998	24192	24998	24192	24998	24998	24192				
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	24998 33.6	24192	24998	294,336
		·										33.6	33.6	33.6
3	TYPFAN		GEN	ERIC FAN					Bldg. 1375	5 Airside Fa	ans			
	ELEC	24998	22579	24998	24192	24998	24192	24998	24998	24192	24998	24192	24998	294,336
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
4	TYPFAN		GEN	ERIC FAN					Bldg. 1	379 Airside	Fans			
	ELEC	24998	22579	24998	24192	24998	24192	24998	24998	24192	24998	24192	24998	294,336
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
5	TYPFAN		GEN	ERIC FAN					Bldg. 1	380 Airside	e Fans		· · · · · · · · · · · · · · · · · · ·	
	ELEC	24998	22579	24998	24192	24998	24192	24998	24998	24192	24998	24192	24998	294,336
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
6	TYPFAN		GEN	ERIC FAN					Bldg	. 1385 Airs	ide Fans			33.0
	ELEC	1637	1478	1637	1584	1637	1584	1637	1637	1584	1637	1584	1637	10.072
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	19,272
7	TYPFAN		GEN	ERIC FAN					Bld	lg. 1382 Ai				2.2
	ELEC	5580	5040	5580	5400	5580	5400	5580	5580	5400	5580	5400	5500	
	PK	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	5580 7.5	65,700
8	TYPFAN		CENT	PDTO DAN					Ble	dg. 1377 A	irside Fans	7		7.0
•	ELEC	5580	5040	ERIC FAN 5580	5400	5580	E400	5500						•
	PK	7.5	7.5	7.5	7.5	7.5	5400	5580	5580	5400	5580	5400	5580	65,700
				7.5	7.3	/.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
9	TYPFAN			ERIC FAN					Bldg.	1384 Airsi	de Fans			
	ELEC	52675	47578	52675	50976	52675	50976	52675	52675	50976	52675	50976	52675	620,208
	PK	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					M								
Num	Code	Jan	Feb	Mar	Apr	Mon May								
				- Indi	vħr	May	June	July	Aug	Sep	0ct	Nov	Dec	Total
10	TYPFAN		GENI	ERIC FAN										
	ELEC	2753	2486	2753	2664	2753	2664	2753	2753	3604	0750			
	PK	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	2753	32,412
					· · · · · · · · · · · · · · · · · · ·							3.7	3.7	3.7
11	TYPFAN		GENE	ERIC FAN				Bl	dg. 1387 A	irside Fan	s			
	ELEC	13552	12240	13552	13115	13552	13115	13552	13552	13115	13552	13115	13552	159,561
	PK	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
10	munna.v								21d~ 120¢	Al-da F				10.2
12	TYPFAN ELEC			ERIC FAN				ı	31dg. 1396	Airside Fa	ns			
	PK	6919	6250	6919	6696	6919	6696	6919	6919	6696	6919	6696	6919	81,468
		9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
13	TYPFAN		GENE	RIC FAN				I	Bldg. 1398	Airside Fa	ine			
	ELEC	1414	1277	1414	1368	1414	1368							
	PK	1.9	1.9	1.9	1.9	1.9	1.9	1414	1414	1368	1414	1368	1414	16,644
								1.9	1.9	1.9	1.9	1.9	1.9	1.9
14	TYPFAN		GENE	RIC FAN										
	ELEC	298	269	298	288	298	288	298	298	288	298	288	298	2.501
	PK	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1			WATE	RTUBE BO	ILER			Bldg. 1	350 HW E	quipment	(BLR-1)			0.4
	GAS	134	71	. 0	0	0	0	0	0	0	0	_		
	PK	6.8	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	205
			r	,						0.0	0.0	0.0	0.0	7.1
1	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	834	358	0	0	0	0	0	0	0	0	0	0	1,192
	PK	29.8	29.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8
1	EQ5311		DOTT											
-	ELEC	4	2	ER CONTR										
	PK	0.1	0.1	0.0	0.0	0	0	0	0	0	0	0	0	5
				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
2		-	WATER	RTUBE BO	ILER			Bldg.	1350 HW	Equipmen	t (BLR-2)			
	GAS	0	0	0	0	0	0	o	0	0	•	_		
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
									•••	0.0	0.0	0.0	0.0	0.0
2	EQ5020		HEATI	ING WATER	R CIRCUL	ATION PU	MP							
	ELEC	0	0	0	0	0	. 0	0	0	0	. 0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
_	B0534-													0.0
	EQ5311			ER CONTRO										
	ELEC PK	0	0	0	0	0	0	0	0	0	0	0	0	0
	• • •	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ó.O	0.0	0.0	0.0	0.0	0.0

Ref			•••••		E Q	UIPM	ENT	ENER	GY (consu	меті	0 N			
Num	Ref	Equip					Mont	hly Cone	umntion						
Second S								_	-					Dec	Total
Section Sect								• • • • • • • • • • • • • • • • • • • •	cary	_					TOCAL
FK 63.6 61.3 12.7 3.2 0.0 0.0 0.0 0.0 0.0 0.0 9.3 56.8 37.7 55.0 57.7 5 57.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5	3	BLR2MQD		WATE	RTUBE BO	ILER WITH	HIGH-I	LOW FIRE		Diugs. 1.	314, 13, 11	, 79, 80 F	iw Equipm	ient (BLK-1)	
FK 63.6 61.3 12.7 3.2 0.0 0.0 0.0 0.0 0.0 0.0 9.3 56.8 63.6 63.6 63.6 63.6 63.6 63.6 63.6 6		GAS	14643	15800	2764	2299	0	0	0	0	0	0	2591	15616	53.713
SECOLO HEATING WATER CIRCULATION PUMP		PK	63.6	61.3	12.7	3.2	0.0	0.0	0.0	0.0					L
ELEC 8333 7526 8333 8064 0															3373
PK	3	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
Section Sect		ELEC	8333	7526	8333	8064	0	0	0	0	0	0	8064	8333	48,653
ELEC 93 84 93 90 0 0 0 0 0 0 0 0		PK	11.2	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2	11.2
ELEC 93 84 93 90 0 0 0 0 0 0 0 0														_	
PK	3			BOIL	ER CONTR	OLS									
Section Sect					93	90	0	0	0	0	0	0	90	93	543
ELEC 8333 7526 8333 8064 0 0 0 0 0 0 0 0 8064 8333 48,653 PK 11.2 11.2 11.2 11.2 11.2 0.0 0.0 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 1		PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
ELEC 8333 7526 8333 8064 0 0 0 0 0 0 0 0 0 8064 8333 48,653 PK 11.2 11.2 11.2 11.2 11.2 0.0 0.0 0.0 0.0 0.0 0.0 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2 11.2	_														
PK	3														
3 EQ5240 BOILER FORCED DRAFT FAN ELEC															<u> </u>
Simple S		PK	11.2	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2	11.2
Simple S	3	F05240		POTT	בס פספרם	ים יהשאמת מי	A NT								
PK 7.5 7.5 7.5 7.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	,		5580					0	0	0	•	•	E400	5500	[22,522]
## BIR2MOD ## BIR2MOD ## BOLLER WITH HIGH-LOW FIRE GAS O	•											_			
GAS O O O O O O O O O O O O O			<u> </u>				• • • •		0.0						7.5
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	4	BLR2MOD		WATE	RTUBE BO	ILER WITH	HIGH-I	LOW FIRE		Bldgs. 13	74, 75, 77,	79, 80 H	W Equipme	ent (BLR-2)	
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		GAS	0	0	0	0	0	0	0	0	0	0	. 0	0	0
ELEC		PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ELEC															
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	4	-		HEAT	'ING WATE	R CIRCULA	TION P	JMP							
4 EQ5311 BOILER CONTROLS ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							0	0	0	0	0	0	0	0	0
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		EOF 211													
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	4		0					•	_		_	_	_		
4 EQ5240 BOILER FORCED DRAFT FAN ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0															L
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4	E05240		BOII	ER FORCE	D DRAFT F	AN								
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			0					0	0	0	0	0	0	0	
Bldg. 1384 HW Equipment GAS 594 602 145 31 0 0 0 0 0 0 115 597 2,085 PK 2.2 2.3 2.0 1.0 0.0 0.0 0.0 0.0 0.0 1.9 2.0 2.3 5 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 2425 2330 638 168 0 0 0 0 0 0 465 2369 8,394		PK	0.0	0.0								_			└
GAS 594 602 145 31 0 0 0 0 0 0 115 597 2,085 PK 2.2 2.3 2.0 1.0 0.0 0.0 0.0 0.0 0.0 1.9 2.0 2.3 5 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 2425 2330 638 168 0 0 0 0 0 0 465 2369 8,394														•••	0.0
PK 2.2 2.3 2.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 1.9 2.0 2.3 5 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 2425 2330 638 168 0 0 0 0 0 465 2369 8,394	5			WATE	RTUBE BO	OILER				Bldg. I	384 HW E	quipment			
5 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 2425 2330 638 168 0 0 0 0 0 465 2369 8,394		GAS	594	602	145	31	0	0	0	0	0	0	115	597	2,085
ELEC 2425 2330 638 168 0 0 0 0 0 465 2369 8,394		PK	2.2	2.3	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	2.0	2.3
ELEC 2425 2330 638 168 0 0 0 0 0 465 2369 8,394															
103 2505	5	EQ5020		HEAT	ING WATE	ER CIRCULA	TION P	JMP							
PK 5.6 5.6 5.6 5.6 0.0 0.0 0.0 0.0 0.0 5.6 5.6 5.6					638	168	0	0	0	0	0	0	465	2369	8,394
		PK	5.6	5.6	5.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.6	5.6

				E Q	UIPM	ENT	ENER	GY C	оиѕи	мрті	0 N			
Ref	Equip					Mont	hly Cons	umption -						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	54	52	14	4	0	0	0	0	0	0	10	53	187
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
6	EQ2263		ELEC	TRIC RES	ISTANCE H	EAT WIT	TH FAN		Ві	dg. 1387 H	IW Equip	ment		
	ELEC	18239	17811	5025	3214	0	0	0	0	0	0	5117	19827	69,232
	PK	87.8	87.3	54.8	4.5	0.0	0.0	0.0	0.0	0.0	0.0	49.6	85.4	87.8
7			WATE	RTUBE BO	TI PD				Bldg	, 1396 HW	/ Equipm	ent		
,	GAS	1783	1764	419	160	0	0	0	0	0	0	436	1802	6,365
	PK	4.7	4.7	3.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.6	4.7
7	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	149	134	149	144	0	0	0	0	0	0	144	149	869
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
7	EQ5311		BOIL	ER CONTR	ols									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
												F		
7	EQ5020	140			R CIRCULA									
	ELEC PK	0.2	0.2	0.2	0.2	0.0	0.0	0	0	0	0	144	149	869
	FK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
8		•	WATE	RTUBE BO	ILER				Bldg. 13	398 HW E	quipment			
	GAS	1259	1277	280	138	0	0	0	0	0	0	307	1190	4,452
	PK	3.4	3.5	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1.9	3.1	3.5
	EQ5020		****	17370 11300	R CIRCULA	mr.c.v ***	747							
•	ELEC	2753	2486	2753	2664	O O	0 DMP	0	0	0	0	2664	2752	16.022
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	16,073
	-	<u> </u>						0.0	0.0	0.0	0.0	L 3./		3.7
8	EQ5311	•	BOII	ER CONTR	OLS.									_
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

03-0185.06 EEAP BOILER-CHILLER STUDY FT. SAM HOUSTON - SAN ANTONIO, TX. CORPS OF ENGINEERS - FT. WORTH, TEXAS HUITT - ZOLLARS INC. AREA 1300

Weather File Code:

 Location:
 SAN ANTONIO, TEXAS

 Latitude:
 29.0 (deg)

 Longitude:
 98.0 (deg)

 Time Zone:
 6

 Elevation:
 792 (ft)

 Barometric Pressure:
 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density Specific Heat Dank 1.0018 (Dtu.min /b

Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 19:33:24 2/26/96
Dataset Name: FSH1300 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 2 ECO J - AIRSIDE EQUIPMENT

System Totals

Percent	Cool	ing Loa	d	Heatin	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	96.4	10	435	-676,562	59	1,818	31,312.7	0	0	0.0	0	0
5 - 10	192.9	9	395	-1,353,124	11	329	62,625.3	0	0	0.0	0	0
10 - 15	289.3	4	190	-2,029,687	8	235	93,938.0	0	0	0.0	0	0
15 - 20	385.8	5	226	-2,706,249	7	219	125,250.7	0	0	0.0	0	0
20 - 25	482.2	9	392	-3,382,811	7	218	156,563.4	0	0	0.0	0	0
25 - 30	578.7	12	525	-4,059,374	7	206	187,876.1	4	365	0.0	0	0
30 - 35	675.1	15	635	-4,735,936	2	75	219,188.7	2	196	0.0	0	0
35 - 40	771.6	7	310	-5,412,499	0	0	250,501.4	1	49	0.0	0	0
40 - 45	868.0	6	260	-6,089,061	0	0	281,814.1	6	525	0.0	0	0
45 - 50	964.5	5	227	-6,765,623	0	0	313,126.8	25	2,150	0.0	0	0
50 - 55	1,060.9	2	108	-7,442,185	0	0	344,439.4	0	0	0.0	0	0
55 - 60	1,157.4	1	53	-8,118,748	0	0	375,752.2	0	0	0.0	0	0
60 - 65	1,253.8	3	126	-8,795,310	0	0	407,064.9	27	2,373	0.0	0	0
65 - 70	1,350.3	4	177	-9,471,872	0	0	438,377.5	11	952	0.0	0	0
70 - 75	1,446.7	5	203	-10,148,434	0	0	469,690.2	2	135	0.0	0	0
75 - 80	1,543.2	2	7 9	-10,824,997	0	0	501,002.8	8	707	0.0	0	0
80 - 85	1,639.6	0	9	-11,501,560	0	0	532,315.6	5	460	0.0	0	0
85 - 90	1,736.1	0	4	-12,178,123	0	0	563,628.3	9	816	0.0	0	0
90 - 95	1,832.5	0	0	-12,854,686	0	0	594,940.9	0	0	0.0	0	0
95 - 100	1,929.0	0	0	-13,531,245	0	0	626,253.6	0	32	0.0	0	0
Hours Off	0.0	0	4,406	0	0	5,660	0.0	0	0	0.0	0	8,760

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption	1					
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	203729	184033	203907	197179	203818	197312	203685	203907	197179	203818	197090	202795	2,398,450
	PK	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0		0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1				SE UTILI										
	CHILLD	0		0	0	11011	10656	11011	11011	10656	11011	0	0	65,357
	PK	0.0	0.0	0.0	0.0	14.8	14.8	14.8	14.8	14.8	14.8	0.0	0.0	14.8
2		•	BA	SE UTILI	ry									
	HOTLD	150	136	150	145	0	0	0	0	0	0	145	150	877
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
3			BA	SE UTILI	ry									
	CHILLD	0			0	19195	18576	19195				0		113,933
	PK	0.0	0.0	0.0	0.0	25.8	25.8	25.8	25.8	25.8	25.8	0.0	0.0	25.8
4				SE UTILI	ry									
	HOTLD	1678		1678	1624	0	0							9,800
	PK	2.3	2.3	2.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2

ECO J - WATERSIDE EQUIPMENT

				E Q	UIPI	MENT	ENE	RGY	соиѕ	јм р т і	O N			
Ref	Equip					Mont	hlv Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5			BASE	UTILITY										
	CHILLD	0	0	0	0	5506	5328	5506	5506	5328	5506	0	0	32,678
	PK	0.0	0.0	0.0	0.0	7.4	7.4	7.4	7.4	7.4	7.4	0.0	0.0	7.4
6			BASE	UTILITY										
	HOTLD	43	39	43	42	0	0	0	0	0	0	42	43	252
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
7			BASE	UTILITY										
	CHILLD	0	0	0	0	818	792	818	818	792	818	0	0	4,858
	PK	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1
8			BASE	UTILITY										
	HOTLD	110	99	110	107	0	0	0	0	0	0	107	110	643
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
9			BASE	UTILITY										
	CHILLD	0	0	0	0	74	72	74	74	72	74	0	0	442
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
10	•		BASE	UTILITY										
	HOTLD	118	106	118	114	0	0	0	0	0	0	114	118	686
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
11			BASE	UTILITY										
	CHILLD	0	0	0	0	595	576	595	595	576	595	0	0	3,533
	PK	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.8
12			BASE	UTILITY										
	HOTLD	94	85	94	91	0	0	0	0	0	0	91	94	547
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
13		•	BASE	UTILITY										
	CHILLD	0	0	0	0	1339	1296	1339	1339	1296	1339	0	0	7,949
	PK	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	1.8	0.0	0.0	1.8
1	EQ1001S		2-S	TG CENTR	IFUGAL	CHILLER	<550 TON	IS		Bldg. 1350	CHW Equi	ipment		
	ELEC	0	0	0	0	79760	94247	109874	114646	91599	36936	0	0	527,062
	PK	0.0	0.0	0.0	0.0	311.6	322.2	326.8	330.2	322.4	290.7	0.0	0.0	330.2
1	EQ5100		COOL	ING TOWER	R FANS									
	ELEC	0	0	0	0	11100	10742	11100	11100	10742	11100	0	0	65,887
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9

				E Q	UIPI	MENT	ENE	RGY	cons	UMPT:	I O N			
Ref	Equip					Mon	thly Con	sumntion						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	432	512	597	623	497	184	0	0	2,846
	bκ	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	1.7
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,597
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
1	EQ5010		COND	ENSER WA	TER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	16666	16128	16666	16666	16128	16666	0	0	98,918
	PK	0.0	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22.4
1	EQ5300		CONT	ROL PANE	r. e. tarri	FDI.OCKS								
-	ELEC	0	0	O PANE.	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
						<u> </u>		RI			80 CHW Eq			1.0
2	EQ1001S			TG CENTR			<550 TON	s	2 53. 1374,	13, 11, 13,	60 CIIW Lq	dipiliciti (c	SILLIC-1)	
	ELEC	0	0	0	0	180734	222560			213599	47986	0	0	1,211,446
	PK	0.0	0.0	0.0	0.0	481.2	496.7	503.9	510.2	495.7	425.7	0.0	0.0	510.2
2	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	38852	37598	38852	38852	37598	38852	0	0	230,604
	PK	0.0	0.0	0.0	0.0	52.2	52.2	52.2	52.2	52.2	52.2	0.0	0.0	52.2
2	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	913	1192	1427	1530	1108	185	0	0	6,354
	ЬK	0.0	0.0	0.0	0.0	3.3	3.7	4.1	4.1	3.7	2.1	0.0	0.0	4.1
2	EQ5001		CHIL	LED WATE	ת שווק א	- CONST	ANT VOLU	ME						
_	ELEC	0	0	0	0	13913	13464	13913	13913	13464	13913	0	0	82,579
	PK	0.0	0.0	0.0	0.0	18.7	18.7	18.7	18.7	18.7	18.7	0.0	0.0	18.7
														
2	EQ5010	_		ENSER WA										
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,597
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	13913	13464	13913	13913	13464	13913	o	0	82,579
	PK	0.0	0.0	0.0	0.0	18.7	18.7	18.7	18.7	18.7	18.7	0.0	0.0	18.7

				E	QUIP	MENT	ENE	RGY	CONS	UMPTI	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
								1	Bldgs. 137	4, 75, 77, 7	9. 80 CHV	V Faninme	ent (CHLR-2)	
3	EQ1001S				RIFUGAL			3		.,,, .	, oo Ciii	· Equipme	an (Cher-2)	, <u> </u>
	ELEC PK	0	0	0	0	18542	41369	55317	64138	31786	. 0	0	0	211,152
	PK	0.0	0.0	0.0	0.0	281.5	391.4	503.9	510.2	394.1	0.0	0.0	0.0	510.2
3	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
						L					1 *.*	0.0	0.0	0.0
3	EQ5010		CON	DENSER W	ATER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	4476	7042	8624	8773	5520	0	0	0	34,435
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	0.0	0.0	0.0	29.8
_														
3	EQ5300	_			EL & INT									
	ELEC	0.0	0	0	0	150	236	289	294	185	0	0	0	1,154
	FK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0
4	EQ1001S		. 2-	STG CENT	RIFUGAL	CHILLER	<550 TON	re.	В	ldg. 1384 C	HW Equip	ment		
	ELEC	0	0	0	0	97914	53752	63031	63489	52477	7371	0	0	338,034
	PK	0.0	0.0	0.0	0.0	201.4	192.3	204.1	212.6	190.8	135.2	0.0	0.0	212.6
						•								22.0
4	EQ5100		COO	LING TOW	ER FANS									
	ELEC	0	0	0	0	11086	10728	11086	11086	10728	11086	0	0	65,798
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
	EQ5100													
4	WATER	0	0	LING TOW 0		474	242	200				_		
	PK	0.0	0.0	0.0	0.0	474 0.9	242 0.9	289 1.0	288 1.0	233 0.9	24	0	0	1,550
			•••	0.0	0.0	0.5	0.9	1.0	1.0	0.9	0.7	0.0	0.0	1.0
4	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	8333	8064	8333	8333	8064	8333	0	0	49,459
	PK	0.0	0.0	0.0	0.0	11.2	11.2	11.2	11.2	11.2	11.2	0.0	0.0	11.2
4	EQ5010				ATER PUM									
	PK	0.0	0	0	0	11086	10728	11086	11086	10728	11086	0	0	65,798
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
4	EQ5300		CONT	TROL PAN	EL & INT	281'UCR6								
-	ELEC	0	0	0	0	744	720	744	744	720	744	^	•	
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
						L							0.0	1.0
5	EQ1288L		AIR	TO AIR	HEAT PUM	P >11 TO	1S		Bldg	. 1387 CH	W Equipm	ent		
	ELEC	28280	26444	31734	31505	23161	26603	30682	32711	24926	12365	30771	30504	329,687
	PK	93.8	92.6	84.4	84.4	100.9	107.7	119.7	123.6	104.0	70.1	84.4	88.7	123.6

				E Q	UIPI	MENT	ENEI	RGY (const	JMPTI	0 N			
Ref	Equip					Mont	hly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5	EQ5210		COND	ENSER FAI	NS-ROOF	OP CHIL	LER							
	ELEC	0	0	0	0	1656	1873	2671	2323	1818	856	0	0	11,196
	PK	0.0	0.0	0.0	0.0	8.3	8.3	11.8	11.8	8.3	5.0	0.0	0.0	11.8
5	EQ5306		CONT	ROLS										
	ELEC	34	32	37	36	37	36	37	37	36	37	36	37	434
	PK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
6	EQ1170S		AIR-	CLD COND	COMP <	22 TONS			Bldg. 1396	CHW Equ	ipment			
	ELEC	0	0	0	0	1008	1266	1489	1687	1265	374	0	0	7,088
	PK	0.0	0.0	0.0	0.0	8.9	9.8	10.1	10.0	9.4	5.2	0.0	0.0	10.1
6	EQ5200		COND	ENSER FA	NS									
	ELEC	0	0	0	0	99	131	209	180	132	30	0	0	782
	PK	0.0	0.0	0.0	0.0	0.9	1.0	1.0	1.0	1.0	0.6	0.0	0.0	1.0
6	EQ5313		CONT	ROLS										
	ELEC	0	0	0	0	142	140	143	145	139	129	0	0	839
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
7	EQ1172S		AIR-	CLD COND	COMP <	55 TONS								
	ELEC	0	0	0	0	5837	7893	9251	10489	7569	1134	0	0	42,172
	PK	0.0	0.0	0.0	0.0	56.9	61.7	64.0	63.5	59.4	34.5	0.0	0.0	64.0
7	EQ5200		COND	ENSER FA	NS									
	ELEC	0	0	0	0	334	476	577	658	461	48	0	0	2,554
	PK	0.0	0.0	0.0	0.0	3.5	3.7	3.7	3.7	3.6	2.2	0.0	0.0	3.7
7	EQ5313		CONT	ROLS										
	ELEC	0	0	0	0	58	65	63	67	60	28	0	0	341
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
я	EQ1070L		ם בירד דים מפ	PROCATIN	י מני א	TONS			Bldg. 1	398 CHW	Equipment			
·	ELEC	0	0	0	0	10784	12782	15496	17187	13446	4277	0	0	73,971
	PK	0.0	0.0	0.0	0.0	67.0	68.0	69.9	70.7	68.9	41.0	0.0	0.0	70.7
8	EQ5200		COMD	ENSER FA	NS									
•	ELEC	0	0	0	0	954	1126	1703	1450	1164	360	0	0	6,757
	PK	0.0	0.0	0.0	0.0	5.6	5.6	5.6	5.6	5.6	3.8	0.0	0.0	5.6
Д	EQ5001		ситт	LED WATE	OMIIO O	- CONST	ANT VOLU	ME						
٠	ELEC	0	0	0	0	- CONST.	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
		0.0	0.0	0.0	5.0	L.,	3.1	3.7	3.1	3.1	3.7	0.0	0.0	3./

				Е С	UIPI	MENT	ENE	RGY (consu	JMPTI	ON			• • • • • • • • • • • • • • • • • • • •
Ref	Equip					Mont	hlv Cons	sumption						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
8	EQ5011		CONI	DENSER WA	ATER PUMI	P-CV (MED)	UM EFFI	2.)						
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	EQ5302			TROLS										
	ELEC	0	0	0	0	74	72	74	74	72	74	0	0	442
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
1	TYPFAN		GEN	ERIC FAN					Bldg.	. 1350 Airs	ide Fans			
	ELEC	19153	17304	47074	53097	30413	32132	34670	34639	30731	25769	45823	18211	389,017
	PK	130.0	121.8	134.2	134.2	124.6	129.2	131.0	132.5	134.2	134.2	134.2	134.2	134.2
2	TYPFAN		GEN	ERIC FAN					Ble	dg. 1374 A	irside Fans			
	ELEC	14311	12928	14406	13834	14358	13929	14264	14406	13834	14358	13834	13837	168,298
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
3	TYPFAN		GEN	ERIC FAN]	Bldg. 1375	Airside Fa	ns	_	
	ELEC	14311	12928	14406	13834	14358	13929	14264	14406	13834	14358	13834	13837	168,298
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
4	TYPFAN		GEN	ERIC FAN						Bldg. 1379	Airside Fa	ıns		
	ELEC	14315	12931	14409	13838	14362	13932	14267	14409	13838	14362	13838	13842	168,343
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
5	TYPFAN		GEN	ERIC FAN					Bld	lg. 1380 Ai	rside Fans			
	ELEC	14315	12931	14409	13838	14362	13932	14267	14409	13838	14362	13838	13842	168,342
	PK	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
6	TYPFAN		GEN	ERIC FAN					ы	ldg. 1385 A	Airside Fans	3		
•	ELEC	596	539	627	572	612	603	581	627	572	612	572	442	6,954
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2,2	2.2	2.2
7	TYPFAN		GEN	ERIC FAN					Blo	ig. 1382 A	irside Fans			
	ELEC	3289	2971	3303	3180	3296	3195	3282	3303	3180	3296	3180	3217	38,693
	PK	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
8											Airside Fan			
٥	ELEC	3368	3083	ERIC FAN 3563	3338	3465	3/135	3368					2205	20 420
	PK	7.5	7.5	7.5	7.5	3465 7.5	7.5	7.5	3563 7.5	7.5	3465 7.5	7.5	7.5	39,420 7.5
		L		7.3	7.5	7.5		7.3						7.5
9	TYPFAN			ERIC FAN							Airside Far			
	ELEC	52675	47578	52675	50976	52675	50976	52675	52675	50976	52675	50976	52675	620,208
	PK	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8

Ref Redity Red					Е С	UIPM	ENT	ENEF	GY C	onst	JMPTI	O N			
Num	Ref	Equip					Mont	hly Cons	umption		 .				
ELEC 2753 2486 2753 2664 2753 2664 2753 2753 2664 2753 2664 2753 2664 2753 2753 2664 2753	Num	Code	Jan	Feb								Oct	Nov	Dec	Total
PK	10	TYPFAN		GENE	RIC FAN										
TYPFAN CENERIC FAN Series Serie		ELEC	2753	2486	2753	2664	2753	2664	2753	2753	2664	2753	2664	2753	32,412
Series Final Series Final Series Final Series Seri		PK	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
PK	11	TYPFAN		GENE	RIC FAN					Bldg	g. 1387 Air:	side Fans			
PK		ELEC	8178	7486	8652	8106	8415	8342	8178	8652	8106	8415	7632	5574	95,736
ELEC 1934 1786 2083 1953 2009 2009 1953 2083 1953 2009 1767 1097 22,635 PK 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3		PK	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	<u> </u>
ELEC 1934 1786 2083 1953 2009 2009 1953 2083 1953 2009 1767 1097 1097 1097	12	TYPFAN		GENE	RIC FAN					Bld	g. 1396 Ai	rside Fans			
PK 9.3			1934			1953	2009	2009	1953	2083	1953	2009	1767	1097	22,636
ELEC		PK	9.3	9.3	9.3	9.3	9.3	9.3							<u> </u>
ELEC	13	TYPFAN		GENE	RIC FAN		· · · ·			Blo	dg. 1398 A	irside Fans			
PK			473			437	471	452	456	469	437	471	475	511	5.542
ELEC 108 98 114 104 111 110 106 114 104 111 104 80 1,264 PK 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4		PK	1.9	1.9	1.9	1.9									<u></u>
PK	14	TYPFAN		GENE	RIC FAN			-							
PK		ELEC	108			104	111	110	106	114	104	111	104	80	1,264
GAS		PK	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
PK 8.8 7.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1			WATE	ERTUBE BO	DILER				Bldg. 1350	0 HW Equi	pment (BL	.R-1)		
PK 8.8 7.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		GAS	469	184	0	0	0	0	0	0	0	0	0	0	653
ELEC 1848 834 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2,682 PK 29.8 29.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		PK	8.8	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		<u> </u>
ELEC 1848 834 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2,682 PK 29.8 29.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	1	EQ5020		HEAT	ING WATE	ER CIRCUI	LATION P	UMP							
PK		_	1848						0	0	0	0	0	0	2.682
ELEC 8 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PK	29.8	29.8	0.0	0.0	0.0		0.0						<u> </u>
ELEC 8 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	E05311		BOII	ER CONTE	ROLS									
PK			8				0	0	0	0	0	0	0	0	11
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		L
GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2		•	WATE	RTUBE BO	TLER				Bldg. 1	350 HW E	quipment ((BLR-2)		
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		GAS	0				0	0	0	0	0	0	0	0	
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PK	0.0	0.0											<u> </u>
ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2	EQ5020		HEAT	TING WATE	ER CIRCUI	LATION P	UMP							
PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			0						0	0	0	0	0	0	0
ELEC 0 0 0 0 0 0 0 0 0 0 0		PK	0.0	0.0	0.0										
ELEC 0 0 0 0 0 0 0 0 0 0 0	2	EQ5311		BOII	LER CONT	ROLS									
			0				0	0	0	0	0	0	0	0	0
		PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	BLR2MOD		WATE	RTUBE BO	OILER WITH	HIGH-I	ישפוש שח.	Blo	igs. 1374,	75, 77, 79,	80 HW E	quipment (BLR-1)	
	GAS	14123	14453	3308	2456	0	0	0	0	0	0	3130		<u> </u>
	PK	56.9	60.1	28.2	7.8	0.0	0.0	0.0	0.0	0.0	0.0	26.8	14027 54.6	51,497 60,1
_														
3	EQ5020 ELEC	8333			R CIRCULA									
	PK	11.2	7526	8333	8064	0	0	0	0	0	0	8064	8333	48,653
	FK	11.2	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2	11.2
3	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
3	EQ5020		неат	ተነበር ሠልጥፑ	R CIRCULA	יים מאריי	IMD							
-	ELEC	8333	7526	8333	8064	0	0	0	0	0	0	8064	0222	10.550
	PK	11.2	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.2	8333	48,653
		<u> </u>							0.0	0.0	0.0	11.2	11.2	11.2
3	EQ5240		BOIL	ER FORCE	D DRAFT F	AN								
	ELEC	5580	5040	5580	5400	0	0	0	0	0	0	5400	5580	32,580
	PK	7.5	7.5	7.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	7.5	7.5	7.5
4	BLR2MOD		WATE	RTUBE BO	ILER WITH	HIGH-I	OW FIRE	Bldg	s. 1374, 75	5, 77, 79, 8	0 HW Eqt	ipment (B	LR-2)	
	GAS	0	0	.0	0	0	0	0	. 0	. 0	0		0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	EQ5020													
-	ELEC	0	0	ING WATE	R CIRCULA 0	TION PU		•	•			_		
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
					•••	•	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	EQ5240		BOTT	FP FORCE	D DRAFT F	N NT								
•	ELEC	0	0	O O	D DRAFT F	AIN 0	0	0	•	•	•			
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0.0	0.0	0.0	0.0	0.0	
						•••	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5			WATE	RTUBE BO	DILER				Bldg	g. 1384 HV	V Equipm	ent		
	GAS	668	672	234	40	0	0	0	0	0	0	196	676	2,485
	PK	1.8	1.9	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.2	2.2
5	EQ5020		нгат	ידאכ שמיים	R CIRCULA	TTON DI	IMD.							
-	ELEC	2727	2604	1008	213	0	0	0	0	0	0	896	2750	10,198

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	O N			
Ref	Equip					Mont	hlv Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5	EQ5311		BOII	ER CONTR	OLS									
	ELEC	61	58	23	5	. 0	0	0	0	0	0	20	61	228
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
_	EQ2263		ייים אינים. יייים או	ייים דרי חופר	ISTANCE H	TO ME	m nam		Bldg	g. 1387 HV	V Equipm	ent		
	ELEC	4314	4635	3322	3214	EA1 WII	.O	0	0	0	0	3214	4257	[00 050]
	PK	69.0	82.7	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	4.5	81.2	22,957 82.7
							•••	0.0					81.2	62.7
7			WATE	RTUBE BO	ILER				Bldg.	1396 HW	Equipmer	ıt		
	GAS	356	370	180	160	0	0	0	0	0	0	174	289	1,528
	PK	4.7	5.2	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.0	5.2	5.2
7	EQ5020		нерт	ነነነር ሠልጥፑ	R CIRCULA	יום וא∩דיד	IMD							
	ELEC	149	134	149	144	0	0	0	0	0	0	144	149	869
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
7	EQ5311		DOTI	ER CONTR	07.0									
•	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
														
7	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	149	134	149	144	0	0	0	0	0	0	144	149	869
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
8			WATE	RTUBE BO	ILER				Bldg	1398 HW	Equipme	nt		
	GAS	288	314	212	125	0	0	0	0	0	0	125	449	1,512
	PK	3.7	4.1	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	3.8	4.1
8	EQ5020		HEAT	ING WATE	R CIRCULA	TION PU	MP							
	ELEC	2753	2486	2753	2664	0	0	0	0	0	0	2664	2753	16,073
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
g	EQ5311		BOTT	ER CONTR	OLS									
J	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

------ EQUIPMENT ENERGY CONSUMPTION-----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec Total 0 LIGHTS 203729 184033 203907 197179 203818 197312 203685 203907 197179 203818 197090 202795 ELEC 2,398,450 941.6 941.6 941.6 941.6 941.6 941.6 941.6 941.6 941.6 941.6 941.6 PK 941.6 1 MISC LD ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 MISC LD GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 MISC LD OIL 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4 MISC LD P STEAM 0 0 0 0 0 0 0 0 0 0 0 ٥ PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 MISC LD P HOTH20 0 0 0 0 0 0 0 0 0 0 n 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6 MISC LD P CHILL 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 41366 40032 41366 41366 40032 0 41366 0 245,529 PK 0.0 0.0 0.0 55.6 0.0 55.6 55.6 55.6 55.6 55.6 0.0 0.0 55.6 1 E01008L 3-STG CENTRIFUGAL > 300 TONS ELEC 0 0 0 0 165551 174355 204739 209519 169287 65609 0 0 989,061 PK 0.0 0.0 0.0 0.0 286.9 298.2 303.4 308.0 297.4 254.7 0.0 0.0 309.0 1 EQ5100 COOLING TOWER FANS ELEC 0 0 0 0 38852 38852 37598 38852 37598 20589 0 0 212.341 PK 0.0 0.0 0.0 0.0 52.2 52.2 52.2 52.2 52.2 52.2 0.0 0.0 52.2 1 EQ5100 COOLING TOWER FANS 0 WATER 0 0 0 1631 1771 2189 2265 1694 499 0 0 10,051 PK 0.0 0.0 0.0 0.0 4.2 4.2 4.2 4.2 4.2 4.1 0.0 0.0 4.2

ELEC

PK

0

0.0

0

0.0

0

0.0

0

0.0

0

29.8

1311

29.8

3695

29.8

4857

29.8

0

29.8

0

29.8

0

0.0

0

0.0

9,864

29.8

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO K1 - WATERSIDE EQUIPMENT

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----June July Sep Num Code Jan Feb Mar Apr May Aug Oct Nov Dec Total CHILLED WATER PUMP - CONSTANT VOLUME 1 E05001 0 22171 21456 22171 ELEC 0 0 0 22171 21456 22171 0 0 131,597 PΚ 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 0.0 ,0.0 29.8 1 EQ5010 CONDENSER WATER PUMP-CV (HIGH EFFIC.) ELEC 0 0 0 0 22171 21456 22171 22171 22171 21456 0 0 131.597 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 1 EO5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 744 0 720 744 744 720 744 0 0 4,416 PΚ 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 1.0 2 EO1008L 3-STG CENTRIFUGAL > 300 TONS ELEC 0 0 0 0 50204 66124 98930 108845 60846 0 0 384,949 0 PK 0.0 0.0 0.0 0.0 286.9 292.5 303.4 308.0 297.4 254.7 0.0 0.0 308.0 2 EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 10192 11622 16301 17075 10430 ٥ 0 0 65.620 PK 0.0 0.0 0.0 29.8 0.0 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 2 EQ5010 CONDENSER WATER PUMP-CV(HIGH EFFIC.) 0 10192 11622 16301 ELEC 0 0 0 17075 10430 0 0 0 65,620 PK 0.0 0.0 0.0 0.0 29.8 29.8 29.8 29.8 29.8 29.8 0.0 0.0 29.8 2 E05300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 342 390 547 573 350 0 0 0 2,202 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 3 E01001S 2-STG CENTRIFUGAL CHILLER <550 TONS ELEC 0 0 0 0 0 2357 11147 13982 0 0 0 0 27,486 PK 0.0 0.0 0.0 0.0 320.2 324.3 332.3 335.7 327.8 56.6 0.0 0.0 335.7 3 EO5100 COOLING TOWER FANS ELEC 0 0 0 0 0 656 1850 2432 0 0 0 0 4.939 PK 0.0 0.0 0.0 0.0 14.9 14.9 14.9 14.9 14.9 14.9 0.0 0.0 14.9 3 EQ5100 COOLING TOWER FANS WATER 0 0 0 0 51 0 9 66 n 0 0 0 . 126 PΚ 0.0 0.0 0.0 1.7 0.0 1.7 1.7 1.7 1.7 0.1 0.0 0.0 1.7 3 EO5001 CHILLED WATER PUMP - CONSTANT VOLUME

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EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

ECO K1 - WATERSIDE EQUIPMENT

				E Q	UIPM	ENT	ENEF	GY C	ONSU	JMPTI	0 N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5010		COND	ENSER WA	TER PUME	-CV(HIGH	H EFFIC.)							
	ELEC	0	0	0	0	0	986	2778	3651	0	0	0	0	7,414
	PK	0.0	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22,4
3	EQ5300		CONT	ROL PANE	L & INTE	RLOCKS								
	ELEC	0	0	0	0	0	44	124	163	0	0	0	0	331
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

ECO K2 - WATERSIDE EQUIPMENT

				Е	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	203729	184033	203907	197179	203818	197312	203685	203,907	197179	203818	197090	202795	2,398,450
	PK	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	ΓY									
	CHILLD	0	0	0	0	41366	40032	41366	41366	40032	41366	0	0	245,529
	PK	0.0	0.0	0.0	0.0	55.6	55.6	55.6	55.6	55.6	55.6	0.0	0.0	55.6
1	EQ1009	•	3-8	STG CTV N	VITH VAR	TABLE FRE	EQUENCY I	ORV						
	ELEC	0	0	0	0	180512	186691	219077	221699	178834	65491	0	0	1,052,304
	PK	0.0	0.0	0.0	0.0	313.0	313.0	313.0	313.0	313.0	313.0	0.0	0.0	313.0
1	EQ5100			OLING TO	NER FANS									
	ELEC	0			0	7748	11301	(16888	20754	10394	. 0	0	0	67,085
	PK	0.0	0.0	0.0	0.0	38.2	43.5	47.4	52.2	44.1	23.6	0.0	0.0	52.2
1	EQ5100		CO	OLING TO	WER FANS									
	WATER	0	0	0	0	1642	1781	2200	2274	1700	499	0	0	10,095
	PK	0.0	0.0	0.0	0.0	4.2	4.2	4.2	4.2	4.2	4.2	0.0	0.0	4.2

ECO K2 - WATERSIDE EQUIPMENT

ef	Equip -					Mon	thly Cons	sumption						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
1	EQ5001		CHIL	LED WATE	R PUMP -	- CONST	ANT VOLUM	ME						
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,5
	PK .	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29
1	EQ5010		COND	ENSER WAT	TER PUMI	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,5
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29
1	EQ5300		CONT	ROL PANEI	L & INTI	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,4
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1
2	EQ1009		3-ST	G CTV WI	TH VARIA	ABLE FRE	QUENCY DI	RV						
	ELEC	0	0	0	0	47252	64018	96167	105683	57787	0	0	0	370,5
	PK	0.0	0.0	0.0	0.0	313.0	313.0	313.0	313.0	313.0	313.0	0.0	0.0	31.
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	10192	11622	16301	17075	10430	0	0	0	65,
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	2
2	EQ5010		COND	ENSER WA	rer pumi	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	10192	11622	16301	17075	10430	0	0	. 0	65,
•	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	2
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	342	390	547	573	350	0	0	0	2,
	ЬК	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	
3	EQ1001S		2-S'	IG CENTR	IFUGAL (CHILLER	<550 TON	S						
	ELEC	0	0	0	0	0	2357	11147	13982	0	0	0	0	27,
	PK	0.0	0.0	0.0	0.0	320.2	324.3	332.3	335.7	327.8	56.6	0.0	0.0	33
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	0	656	1850	2432	0	0	0	0	4,
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	1
3	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	0	9	51	66	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	0.1	0.0	0.0	
3	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	0	1311	3695	4857	0	0	0	0	9,
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	2

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EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4

ECO K2 - WATERSIDE EQUIPMENT

				E Q	UIPM	ENT	ENEF	RGY C	onst	JMPTI	O N			
Ref	Equip					Mont	hly Cons	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5010		COND	ENSER WA	TER PUMP	-CV(HIGH	EFFIC.)							
	ELEC	0	0	0	0	0	986	2778	3651	0	0	0	0	7,414
	PK	0.0	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22.4
3	EQ5300		CONT	ROL PANE	L & INTE	RLOCKS								
	ELEC	0	0	0	0	0	44	124	163	0	0	0	0	331
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0 0	1.0

ECO K3 - WATERSIDE EQUIPMENT

				Е	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	203729	184033	203907	197179	203818	197312	203685	203907	197179	203818	197090	202795	2,398,450
	PK	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BA	SE UTILI	ΓY									
	CHILLD	0	0	0	0	41366	40032	41366	41366	40032	41366	0	0	245,529
	PK .	0.0	0.0	0.0	0.0	55.6	55.6	55.6	55.6	55.6	55.6	0.0	0.0	55.6
1	YSCRW22		YO	RK W.C.	SCREW CH	LLER								
	ELEC	0	0	0	0	201441	210184	235363	243388	204723	68088	0	0	1,163,188
	PK	0.0	0.0	0.0	0.0	337.4	349.2	354.8	359.5	348.4	304.7	0.0	0.0	359.5
1	EQ5100		CO	OLING TO										
	ELEC	0		0	0	38852	37598	38852	38852	37598	19537	0	0	211,288
	PK	0.0	0.0	0.0	0.0	52.2	52.2	52.2	52.2	52.2	52.2	0.0	0.0	52.2
1	EQ5100				WER FANS									
	WATER	0									418	0	0	10,245
	PK	0.0	0.0	0.0	0.0	4.3	4.3	4.3	4.3	4.3	4.2	0.0	0.0	4.3

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2
ECO K3 - WATERSIDE EQUIPMENT

				E Q	UIPI	MENT	E N E	RGY	CONS	UMPT	I O N			**
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,597
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
1	EQ5011		COND	ENSER WA	TER PUM	P-CV (MED	IUM EFFI	c.)						
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,597
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	YSCRW22		YORK	W.C. SC	REW CHI	LLER								
	ELEC	0	0	0	0	67437	74834	108025	120037	70811	17	0	0	441,162
	PK	0.0	0.0	0.0	0.0	337.4	348.0	354.8	359.5	348.4	304.7	0.0	0.0	359.5
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	12933	12337	17850	19430	11860	119	0	0	74,530
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5011		COND	ENSER WA	TER PUM	P-CV (MED	IUM EFFI	(C.)						
	ELEC	0	0	0	0	12933	12337	17850	19430	11860	119	0	0	74,530
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	434	414	599	652	398	4	0	0	2,501
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
3	EQ1001S		2-8	IG CENTR	IFUGAL	CHILLER	<550 TON	IS						
	ELEC	0	0	0	0	11859	21721	30122	34502	18075	0	0	0	116,280
	PK	0.0	0.0	0.0	0.0	320.2	324.3	332.3	335.7	327.8	56.6	0.0	0.0	335.7
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	1238	2328	2313	2313	1701	0	0	0	9,892
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9
3	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	64	117	159	181	97	0	0	0	617
	PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	0.1	0.0	0.0	1.7
3	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	JME						
	ELEC	0	0	0	0	2473	4649	4619	4619	3397	0	0	0	19,757
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8

ECO K3 - WATERSIDE EQUIPMENT

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	O N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5010		COND	ENSER WA	TER PUMP	-CV (HIGH	EFFIC.)							
	ELEC	0	0	0	0	1859	3494	3472	3472	2554	0	0	0	14,851
	PK	0.0	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22.4
3	EQ5300		CONT	ROL PANE	L & INTE	RLOCKS								
	ELEC	0	0	0	0	83	156	155	155	114	0	0	0	663
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

ECO K4 - WATERSIDE EQUIPMENT

				Е	QUIP	MENT	ENE	RGY	соиѕ	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	203729	184033	203907	197179	203818	197312	203685	203907	197179	203818	197090	202795	2,398,450
	PK	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	. 0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	. 0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH2O	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILI	ΓY									
	CHILLD	0	0	0	0	41366	40032	41366	41366	40032	41366	0	0	245,529
	PK	0.0	0.0	0.0	0.0	55.6	55.6	55.6	55.6	55.6	55.6	0.0	0.0	55.6
1					VEN CHILI	LER, 80 1	CONS							
	GAS	0	0	0	0	19367	20344	24481	25091	19702	7203	0	0	116,188
	PK	0.0	0.0	0.0	0.0	35.0	36.1	36.6	37.1	36.0	31.8	0.0	0.0	37.1
1	EQ5100		COC	OLING TO	NER FANS									
	ELEC	0	0	0	0	38852	37598	38852	38852	37598	20570	0	0	212,322
	PK	0.0	0.0	0.0	0.0	52.2	52.2	52.2	52.2	52.2	52.2	0.0	0.0	52.2
1	EQ5100		CO	OLING TO	WER FANS									
	WATER	0	0	0	0	2091	2291	2863	2974	2182	632	0	0	13,033
	PK	0.0	0.0	0.0	0.0	5.5	5.5	5.6	5.6	5.6	5.3	0.0	0.0	5.6

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EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

ECO K4 - WATERSIDE EQUIPMENT

			· -	E Q	UIPN	1 E N T	ENEI	RGY (CONS	JMPT	ION			
Ref	Equip -					Mon	thly Cons	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5001		CHILI	LED WATER	R PUMP -	- CONST	ANT VOLU	ME						
	ELEC	0	. 0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,597
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
1	EQ5010		CONDI	ENSER WA	TER PUMI	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	22171	0	0	131,597
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
1			HEATI	ER FOR E	NGINE D	RIVEN CH	ILLER							
	ELEC	112	101	112	108	0	0	0	0	0	0	108	112	652
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
2			ENGI	NE DRIVE	N CHILL	ER, 80 T	ons							
	GAS	0	0	0	0	5236	7360	11141	12348	6449	0	0	0	42,534
	PK	0.0	0.0	0.0	0.0	35.0	35.6	36.6	37.1	36.0	31.8	0.0	0.0	37.1
2	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	10192	11622	16301	17075	10430	0	0	0	65,620
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5010		COND	ENSER WA	TER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	10192	11622	16301	17075	10430	0	0	0	65,620
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	342	390	547	573	350	0	0	0	2,202
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2		•	HEAT	ER FOR E	NGINE D	RIVEN CH	ILLER							
	ELEC	112	101	112	108	60	49	30	26	55	112	108	112	984
	PK	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
3	EQ1001S		2-8	TG CENTR	IFUGAL	CHILLER	<550 TON	s						
	ELEC	0	0	0	0	0	2357	11147	13982	0	0	0	0	27,486
	PK	0.0	0.0	0.0	0.0	320.2	324.3	332.3	335.7	327.8	56.6	0.0	0.0	335.7
3	EQ5100		COOL	ING TOWE	R FANS									
	ELEC	0	0	0	0	0	656	1850	2432	0	0	0	0	4,939
	PK	0.0	0.0	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	0.0	0.0	14.9

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By: HUITT & ZOLLARS

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

ECO K4 - WATERSIDE EQUIPMENT

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	O N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
3	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	0	9	51	66	0	0	0	0	126
	PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	0.1	0.0	0.0	1.7
3	EQ5001		CHIL	LED WATE	R PUMP -	CONSTA	ANT VOLUM	Œ						
	ELEC	0	0	0	0	0	1311	3695	4857	0	0	0	0	9,864
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
3	EQ5010		COND	ENSER WA	TER PUMF	-CV (HIGH	H EFFIC.)							
	ELEC	0	0	0	0	0	986	2778	3651	0	0	0	0	7,414
	PK	0.0	0.0	0.0	0.0	22.4	22.4	22.4	22.4	22.4	22.4	0.0	0.0	22.4
3	EQ5300		CONT	ROL PANE	L & INTE	RLOCKS								
	ELEC	0	0	0	0	0	44	124	163	0	0	0	0	331
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

ECO L - WATERSIDE EQUIPMENT

				Е	QUIP	MENT	ENE	RGY	CONS	имрт	I O N			
Ref	Equip					Mon	thly Cor	sumption	۱				*	
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	203729	184033	203907	197179	203818	197312	203685	203907	197179	203818	197090	202795	2,398,450
	PK	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6	941.6
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	. 0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	ΥΥ									
	HOTLD	2193	1981	2193	2123	0	0	0	0	0	0	2123	2193	12,806
	PK	2.9	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	0.0	2.9	2.9	2.9
1		•	HIC	GH EFFIC	IENCY MO	DULAR FII	RETUBE BO	OIL.						
	GAS	9567	9866	3150	2331	0	0	0	0	0	0	3035	9491	37,439
	PK	20.0	20.0	14.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	11.9	20.0	20.0
1	EQ5020		HEA	ATING WAT	TER CIRC	ULATION 1	PUMP							
	ELEC	4166		4166	4032		0		0		0	4032	4166	24,326
	PK	5.6	5.6	5.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.6	5.6
1	EQ5311		во	ILER CON	TROLS									
	ELEC	93		93			0				0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

ECO ${f L}$ - WATERSIDE EQUIPMENT

				E Q	UIPM	ENT	ENER	GY C	onsu	MPTI	O N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2			HIGH	EFFICIE	NCY MODU	LAR FIRE	TUBE BOI	L.						
	GAS	4079	4645	0	0	0	0	0	0	0	0	0	4709	13,434
	PK	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0
2	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	1434	1725	0	0	0	0	0	0	0	0	0	1719	4,878
	PK	5.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.6
2	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	32	38	0	0	0	0	0	0	0	0	0	38	109
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
3			HIGH	EFFICIE	NCY MODU	LAR FIRE	TUBE BOI	L.						
	GAS	1680	1690	0	0	0	0	0	0	0	0	0	1858	5,228
	PK	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	20.0
3	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	683	851	0	0	0	0	0	0	0	0	0	896	2,430
	PK	5.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.6
3	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	15	19	0	0	0	0	0	0	0	0	0	20	54
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
4			HIGH	EFFICIE	NCY MODU	LAR FIRE	TUBE BOI	L.						
	GAS	47	29	0	0	0	0	0	0	0	0	0	0	76
	PK	3.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
4	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	168	84	0	0	0	0	0	0	0	0	0	0	252
	PK	5.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
4	EQ5311	•	BOIL	ER CONTR	OLS									
	ELEC	4	2	0	0	0	0	0	0	0	0	0	0	6
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

01 Card - Job Information ------

Project: 03-0185.06 EEAP BOILER-CHILLER STUDY

Location: FORT SAM HOUSTON, TEXAS

Client: CORPS OF ENGINEERS - FORT WORTH, TEXAS

Program User: HUITT-ZOLLARS, INC.

Comments: AREA 2200

Card 08------ Climatic Information -----Summer Winter Summer Summer Winter Summer Winter Weather Clearness Clearness Design Design Design Building Ground Ground Code Number Dry Bulb Wet Bulb Dry Bulb Orientation Reflect Reflect SANANTON

----- Load Section Alternative #1 -----

Card 19- Load Alternative -

Number Description

1

AREA 2200 EXISTING BUILDINGS

	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimete
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 2263	264	265	3	3	2.54	11			
15	15	DINING 2265	77	77	3	2.5	2.54	11			
20	20	BARR 2265	299	299	3	2.5	2.54	11			
25	25	ADMIN 2264	221	222	3	2.5	2.54	11			
30	30	BARR 2264	221	222	3	2.5	2.54	11			
35	35	ADMIN 2266	221	222	3	2.5	2.54	11			
40	40	BARR 2266	221	222	3	2.5	2.54	11			
45	45	ADMIN 2200	38	38.5	4	2	2.54	15.5			
50	50	CHAPEL 2200	117.5	117.5	4	2	1.80	38			
55	55	BLDG 2244	65	65	4	3	2.54	12			
60	60	ADMIN 2247	67	67	4	2	2.54	11			
65	65	CLASS 2247	43	43	4	2	2.54	11			
70	70	BLDG 2248	93.5	94	4	4	2.54	12			
75	75	BLDG 2250	93.5	94	4	4	2.54	12			
80	80	BLDG 2270	101.5	101.5	4	5	2.54	31			
85	85	BLDG 2272	75.5	75.5	4	2	2.54	12			
90	90	BLDG 2273	61.5	23	4	2	2.54	12			

Card 21				Therm	ostat Param	eters				
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70		ROOM	LIGHT30	YES
15	78	50	78		70	70		ROOM	LIGHT30	NO
20	78	50	78		70	70		ROOM	LIGHT30	YES
25	78	50	78		70	70		ROOM	LIGHT30	YES
30	78	50	78		70	70		ROOM	LIGHT30	YES
35	78	50	78		70	70		ROOM	LIGHT30	YES
40	78	50	78		70	70		ROOM	LIGHT30	YES
45	78	50	78		70	70		ROOM	LIGHT30	YES
50	78	50	78		70	70		ROOM	LIGHT30	YES
55	78	50	78		70	70		ROOM	LIGHT30	YES
60	78	50	78		70	70		ROOM	LIGHT30	YES
65	78	50	78		70	70		ROOM	LIGHT30	YES
70	78	50	78		70	70		ROOM	LIGHT30	YES
75	78	50	78		70	70		ROOM	LIGHT30	YES
80	78	50	78		70	70		ROOM	LIGHT30	YES
85	78	50	78		70	70		ROOM	LIGHT30	YES
90	78	50	78		70	70		ROOM	LIGHT30	YES

Card 22	:			Roof Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
5	1	NO	164	164	.09	37		80	
20	1	NO	165	166	.09	37		80	
30	1	NO	165	166	.09	37		80	
40	1	NO	165	166	.09	37		80	
45	1	YES			0.12	20			
50	1	NO	81	81	0.05	37			
55	1	YES			0.14	37			
60	1	NO	55	53	0.14	37			
65	1	YES			0.14	37			
70	1	NO	66	66	0.14	37			
75	1	NO .	66	66	0.14	37			
80	1	YES			0.20	37			
85	1	NO	60	60.5	0.14	37			
90	1	YES			0.14	37			

Card 24				Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Туре	Direction	Tilt	Alpha	Multiplier
5	1	924	11	.49	74	0			
5	2	414	11	.49	74	90			

Card 24				Wall F	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number		_	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
5	3	924	11	.49	74	180			
5	4	414	11	.49	74	270			
15	1	309	11	.41	94	0			
20	1	810	11	.41	94	0			
20	2	243	11	.41	94	90			
20	3	810	11	.41	94	180			
20	4	243	11	.41	94	270			
25	1	357	11	.41	94	0			
25	2	81	11	.41	94	90			
25	3	357	11	.41	94	180			
25	4	81	11	.41	94	270			
30	1	714	11	.41	94	0			
30	2	162	11	.41	94	90			
30	3	714	11	.41	94	180			
30	4	162	11	.41	94	270			
35	1	357	11	.41	94	0			
35	2	81	11	.41	94	90			
35	3	357	11	.41	94	180			
35	4	81	11	.41	94	270			
40	1	714	11	.41	94	0			
40	2	162	11	.41	94	90			
40	3	714	11	.41	94	180			
40	4	162	11	.41	94	270			
45	1	68	15.5	0.22	62	0			
45	2	41	15.5	0.22	62	90			
45	3	34	15.5	0.22	62	180			
45	4	34	15.5	0.22	62	270			
50 50	1 2	86 59	38	0.22	62	0			
50	3	100	38 38	0.22	62	90			
50	4	61.5	38	0.22 0.22	62 62	180 270			
55	1	130	12	0.26	88	0			
55	2	38	12	0.26	88	90			
55	3	130	12	0.26	88	180			
55	4	38	12	0.26	88	270			
60	1	99	11	0.26	88	0			
60	2	53	11	0.26	88	90			
60	3	99	11	0.26	88	180			
60	4	53	11	0.26	88	270			
65	1	44	11	0.26	88	0			
65	2	43	11	0.26	88	90			
65	3	44	11	0.26	88	180			
65	4	43	11	0.26	88	270			
70	1	34	24	0.26	88	0			
70	2	145	24	0.26	88	90			
70	3	34	24	0.26	88	180			
70	4	145	24	0.26	88	270			

Card 24				Wall Pa	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
75	1	34	24	0.26	88	0			
75	2	145	24	0.26	88	90			
75	3	34	24	0.26	88	180			
75	4	145	24	0.26	88	270			
80	1	58	38	0.30	88	0			
80	2	138	38	0.30	88	90			
80	3	66	38	0.30	88	180			
80	4	138	38	0.30	88	270			
85	1	76	12	0.26	88	0			
85	2	46.5	12	0.26	88	90			
85	3	76	12	0.26	88	180			
85	4	46.5	12	0.26	88	270			
90	1	61.5	12	0.26	88	0			
90	2	23	12	0.26	88	90			
90	3	61.5	12	0.26	88	180			
90	4	23	12	0.26	88	270			

Card 25	;				W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Туре	Ret. Air	Transmittance	Reflectance
5 .	1	3	6	97	1.1	.67					
5	2			16	.63	1					
5	3			32	.57	1					
5	4			16	.63	1					
15	1	3	6	35	1.1	.67					
20	1	3	6	82	1.1	.67					
20	2	3	6	27	1.1	.67	•				
20	3	3	6	96	1.1	.67	3				
20	4	3	6	27	1.1	.67					
25	1	3	6	41	1.1	.67					
25	2	3	6	9	1.1	.67					
25	3	3 .	6	48	1.1	.67	3				
25	4	3	6	9	1.1	.67					
30	1	3	6	82	1.1	.67					
30	2	3	6	18	1.1	.67					
30	3	3	6	96	1.1	.67	3				
30	4	3	6	18	1.1	.67					
35	1	3	6	41	1.1	.67				•	
35	2	3	6	9	1.1	.67					
35	3	3	6	48	1.1	.67	3				
35	4	3	6	9	1.1	.67					
40	1	3	6	82	1.1	.67					
40	2	3	6	18	1.1	.67					
40	3	3	6	96	1.1	.67	3				

				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Туре	Туре	Ret. Air	Transmittance	Reflectance
40	4	3	6	18	1.1	.67					
45	1	10	4	4	1.1	1					
45	2	10	4	2	1.1	1					
45	3	10	4	.5	1.1	1					
45	4	10	4	1	1.1	1					
50	1			5.8	1.1	1					
50	2			15.6	1.1	1					
50	3			.4	1.1	1					
50	4			16.7	1.1	1					
55	1	6	3	7	1.1	1	4				
55	2	6	3	3	1.1	1	4				
55	3	6	3	8	1.1	1	4				
55	4	6	3	4	1.1	1	4				
60	1			7.5	1.1	1					
60	2			2.4	1.1	1					
60	3			7.5	1.1	1					
60	4			20.6	1.1	1					
65	1	5.5	2.5	4	1.1	1					
65	2	5.5	2.5	3	1.1	1					
65	3	5.5	2.5	4	1.1	1					
70	1	6.5	3	2	1.1	1					
70	2	6.5	3	10	1.1	1	5				
70	3	6.5	3	2	1.1	1					
70	4	6.5	3	10	1.1	1	5				
75	1	6.5	3	2	1.1	1					
75	2	6.5	3	10	1.1	1	5				
75	3	6.5	3	2	1.1	1					
75	4	6.5	3	10	1.1	1	5				
85	1	6	3	21	1.1	1					
85	2	6	3	12	1.1	1					
85	3	6	3	13	1.1	1					
85	4	6	3	12	1.1	1					
90	1	6	4	4	1.1	1	5				
90	2	6	4	2	1.1	1	5				
90	3	6 .	4	4	1.1	1					
90	4	6	4	2	1.1	1	5				

Card 26				s	chedules -					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHOFFIC	FSHOFFIC								
15	FSHDINP	FSHDINL								
20	FSHBARRP	FSHBARRL								
25	FSHOFFIC	FSHOFFIC								
30	FSHBARRP	FSHBARRL								

Card 26				S	Schedules					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
35	FSHOFFIC	FSHOFFIC								
40	FSHBARRP	FSHBARRL								
45	FSHOFFIC	FSHOFFIC								
50	FSHCHAPP	FSHCHAPL								
55	FSHLIB	AVAIL								
60	FSHOFFIC	FSHOFFIC								
65	FSHCLASP	FSHCLASL								
70	FSHOFFIC	FSHOFFIC								
75	FSHOFFIC	FSHOFFIC								
80	FSHTHEAP	FSHTHEAL								
85	FSHOFFIC	FSHOFFIC								
90	FSHOFFIC	FSHOFFIC								

Card 27	'				Peopl	e and Ligh	ts				
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
5	250	PEOPLE	250	200	2.5	WATT-SF	ASHRAE2				
15	400	PEOPLE	275	275	1.1	WATT-SF	ASHRAE2				
20	215	PEOPLE	250	200	.8	WATT-SF	ASHRAE2				
25	40	PEOPLE	250	200	1.7	WATT-SF	ASHRAE2				
30	350	PEOPLE	250	200	. 8	WATT-SF	ASHRAE2				
35	40	PEOPLE	250	200	1.7	WATT-SF	ASHRAE2				
40	350	PEOPLE	250	200	.8	WATT-SF	ASHRAE2				
45	5	PEOPLE	250	200	2	WATT-SF	ASHRAE2				
50	550	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
55	12	PEOPLE	250	200	1.7	WATT-SF	ASHRAE2				
60	8	PEOPLE	250	200	1.6	WATT-SF	ASHRAE2				
65	30	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
70	35	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
75	35	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
80	950	PEOPLE	225	105	1.0	WATT-SF	ASHRAE2				
85	35	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
90	3	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
15	1	DIN. EQ.	1	WATT-SF	FSHDINL	NONE					
20	1	T.V. ETC.	1	WATT-SF	FSHBARRL	NONE					
25	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
30	1	T.V. ETC.	1	WATT-SF	FSHBARRL	NONE					

Card 28				Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
35	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
40	1	T.V. ETC.	1	WATT-SF	FSHBARRL	NONE					
45	1	OFFICE EQ	1.40	WATT-SF	FSHOFFIC	NONE					
50	1	CHAPEL EQ	0.25	WATT-SF	FSHCHAPL	NONE					
55	1	OFFICE EQ	2.7	WATT-SF	AVAIL	NONE					
60	1	OFFICE EQ	4.3	WATT-SF	FSHOFFIC	NONE					
65	1	CLASS EQ	0.5	WATT-SF	FSHCLASL	NONE					
70	1	OFFICE EQ	2.2	WATT-SF	FSHOFFIC	NONE					
75	1	OFFICE EQ	2.2	WATT-SF	FSHOFFIC	NONE					
85	1	OFFICE EQ	2.1	WATT-SF	FSHOFFIC	NONE					
90	1	OFFICE EQ	1.8	WATT-SF	FSHOFFIC	NONE					

		Venti	lation			Infil	tration			
Room	20 CFM-P 20 CFM-P 20 CFM-P 20 CFM-P	ting	Coo	ling	Неа	ing	Reheat	Minimum		
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
5	20	CFM-P	20	CFM-P						
15	20	CFM-P	20	CFM-P						
20	20	CFM-P	20	CFM-P						
25	20	CFM-P	20	CFM-P						
30	20	CFM-P	20	CFM-P						
35	20	CFM-P	20	CFM-P						
10	20	CFM-P	20	CFM-P						
15	20	CFM-P	20	CFM-P						
50	15	CFM-P	15	CFM-P						
55	20	CFM-P	20	CFM-P						
50	20	CFM-P	20	CFM-P						
55	15	CFM-P	15	CFM-P						
70	20	CFM-P	20	CFM-P						
75	20	CFM-P	20	CFM-P						
80	15	CFM-P	15	CFM-P						
85	20	CFM-P	20	CFM-P						
90	20	CFM-P	20	CFM-P						

Card 31			Part	ition Param	eters -				
Room	Partition	Partition	Partition	Partition	Const	Temp	Cooling	Heating	Adjacent
Number	Number	Length	Height	U-Value	Type	Flag	Temp	Temp	Room No
85	1	148.5	12	0.33	103	HRLYOADB			

Card 33-				E	xternal Shad	ling			
		OVERHA	NG			VERTICAL F	'INS		
		Height				Left		Right	Adjacent
Shading	Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building
Type	Height	Glass	Out	Width	Left	Out	Right	Out	Flag
3	6	1	5						
4	6	2	3.5						
5	6.5	2	10						

Card 39- System Alternative

Number Description

AREA 2200 EXISTING AIRSIDE SYSTEMS

----- System Section Alternative #1 ------

Card 40----- System Type ----------OPTIONAL VENTILATION SYSTEM------System Ventil Set System Deck Cooling Heating Cooling Heating Static Number Type Location SADBVh SADBVh Schedule Schedule Pressure BPMZ SZ 8 BPMZ 9 BPMZ 10 BPMZ 11 BPMZ 12 FC 13 FC

Card 41 System					Zone A	ssignmen	t					
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	5										
2	15	20										
3	25	30										
4	35	40										
5	45	45										
6	50	50										
7	55	55										
8	60	65										
9	70	70										
10	75	75										

Card 41					Zone A	ssignment						
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
12	85	85										
13	90	90										

Card 42				Fan	SP an	d Duct P	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										
2	1.0										
3	1.0										
4	1.0										
5	1.0										
6	1.0										
7	1.0										
8	1.0										
9	1.0										
10	1.0										
11	1.0										
12	1.0										
13	1.0										

	Card 45					Equi	ipment Sched	dules				
Number Coil Economizer Coil Coil Coil Coil Coil Coil Humidity Coil 1 FTSAMCLG 2 FTSAMCLG 3 FTSAMCLG 4 FTSAMCLG 5 FTSAMCLG 5 FTSAMCLG 6 FTSAMCLG 7 FTSAMCLG 7 FTSAMCLG 7 FTSAMCLG 7 FTSAMCLG 8 FTSAMCLG 8 FTSAMCLG 8 FTSAMCLG 8 FTSAMCLG 9 FTSAMCL	System	in		Di	irect	Indirect	Auxiliary	Main	Main			Auxiliary
FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG	Set	oling	ıg	Ev	vap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating
FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	Number	il Economizer	Econ	er Co	oil	Coil	Coil	Coil	Coil	Coil	Humidity	Coil
FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG FTSAMHTG	1	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
4 FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG 5 FTSAMHTG FTSAMHTG FTSAMHTG	2	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
5 FTSAMHTG FTSAMHTG FTSAMHTG	3	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
	4	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
6 FTSAMHTG FTSAMHTG	5							FTSAMHTG	FTSAMHTG	FTSAMHTG		
	6	•						FTSAMHTG	FTSAMHTG	FTSAMHTG		
7 FTSAMHTG FTSAMHTG	7							FTSAMHTG	FTSAMHTG	FTSAMHTG		
8 FTSAMHTG FTSAMHTG FTSAMHTG	8							FTSAMHTG	FTSAMHTG	FTSAMHTG		
9 FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG	9	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
10 FTSAMCLG FTSAMHTG FTSAMHTG	10	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
11 FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG	11	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
12 FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG	12	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		
13 FTSAMCLG FTSAMHTG FTSAMHTG FTSAMHTG	13	SAMCLG	CLG					FTSAMHTG	FTSAMHTG	FTSAMHTG		

----- Equipment Section Alternative #1 ------

Card	60					Cooling	Load Assign	ment				
Load	All Coil	Cooling										
Asgn	Loads To	Equipment	-Grou	p 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Ref	Cool Ref	Sizing	Begin	End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1		1	4								
2	2		5	6								
3	3		7	7								
4	4		8	8								
5	5		9	10								
6	6		11	11								
7	7		12	13								

Card	62				Coo	ling Equipm	ent Par	ameters					
Cool	Equip	Num		COOLI	NG			HEAT REC	COVERY		Seq		Demand
Ref	Code	Of	Capa	city	Ener	gy	Capa	city	Ener	gy	Order	Seq	Limit
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number
1	EQ1001L	1	657	TONS	598	KW							
2	ACC2	1	60	TONS	80.2	KW							
3	EQ1172L	1 .	20	TONS	37.7	KW							
4	EQ1130L	1	20	TONS	29	KW							
5	ACC2	1	57.5	TONS	79.5	KW							
6	EQ1130L	1	66.6	TONS	68.4	KW							
7	ACC1	1	40	TONS	52.9	KW							

Card	63			Cooling Pu	mps and Ref	erences				
Cool	CHILLED	WATER	CONDE	NSER	HT REC	or AUX	Switch-			
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.
1	74.6	KW	37.3	KW					1	
2	2.2	KW								
4			1.5	KW .					2	
5	3.0	KW								4
6			3.7	KW					3	
7	3.7	KW								

Card 65				Heating	Load Assign	ment				
Load	All Coil									
Assignment	Loads To	-Group 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
1	1	1 4								

Card 65				Heating	Load Assign	ment				
Load	All Coil									
Assignment	Loads To	-Group	lGroup 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref	Begin E	nd Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End	Begin End
2	4	5 6								
3	5	7 7								
4	6	8 8								
5	7	9 1	י							
6	8	11 1	L							
7	10	12 1	3							

Card 67														
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BLR2MOD	1	11.2	KW	2240	MBH	3000	MBH	1			1		
2	BLR2MOD	1	11.2	KW	2240	MBH	3000	MBH	2			2		
3	BLR2MOD	1	11.2	KW	2240	MBH	3000	MBH	3			3		
4	BOILERWT	1	1.5	KW	831.7	MBH	1050	MBH						
5	BOILERWT	1	1.5	KW	112.2	MBH	150	MBH				5		
6	STEAMBLR	1			79.9	MBH	197.2	MBH						
7	BOILERWT	1	0.2	KW	679	MBH	900	MBH				6		
8	BOILERWT	1	2.2	KW	550	MBH	750	MBH	1					
9	BOILERWT	1	2.2	KW	550	MBH	750	MBH	2					
10	BOILERWT	1	3.7	KM	388	MBH	525	MBH						

Card 69 Fan Equipment Parameters										
System										
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional			
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation			
1	TYPFAN									
2	TYPFAN									
3	TYPFAN									
4	TYPFAN									
5	TYPFAN									
6	TYPFAN									
7	TYPFAN									
8	TYPFAN									
9	TYPFAN									
10	TYPFAN									
11	TYPFAN									
12	TYPFAN									
13	TYPFAN									

Card 70 Fa					Equip	ment K	W Over	rides				
		main s	YSTEM-		OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	Opt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	29.8											
7	2.2											
9	5.2											
10	5.2											
11	14.9											
13	0.6											

Card 71-	ard 71 Base Utility Parameters									
Base	Base	Hourly	Hourly			Equip	Demand			
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving	
Number	Descrip	Value	Units	Code	Туре	Number	Number	Temp	Temp	
1	PIPE-PUMP HT LOS	31.8	TONS	FTSAMCLG	CHILL-LD	1				
2	PIPE-PUMP HT LOS	1.7	TONS	FTSAMCLG	CHILL-LD	2				
3	PIPE-PUMP HT LOS	0.3	TONS	FTSAMCLG	CHILL-LD	3				
4	PIPE-PUMP HT LOS	0.4	TONS	FTSAMCLG	CHILL-LD	4				
5	PIPE-PUMP HT LOS	1.7	TONS	FTSAMCLG	CHILL-LD	5				
6	PIPE-PUMP HT LOS	1.4	TONS	FTSAMCLG	CHILL-LD	6				
7	PIPE-PUMP HT LOS	1.5	TONS	FTSAMCLG	CHILL-LD	7				
8	PIPE LOSS	130.7	MBH	FTSAMHTG	HOT-LD	1				
9	PIPE LOSS	18.1	MBH	FTSAMHTG	HOT-LD	4				
10	PIPE LOSS	6.1	MBH	FTSAMHTG	HOT-LD	6				
11	PIPE LOSS	9.3	MBH	FTSAMHTG	HOT-LD	7				
12	PIPE LOSS	27.7	MBH	FTSAMHTG	HOT-LD	8				
13	PIPE LOSS	5.9	MBH	FTSAMHTG	HOT-LD	10				

Card 7	4			Condenser	/ Cooling	g Tower Par	rameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
1	EQ5100			29.8	KW	T-WATER	CTOWER	2			
2	EQ5200			1.5	KW	T-WATER	CNDFAN	1			
3	EQ5200			2.2	KW	T-WATER	CNDFAN	1			

Card	75				Misc	ellaneous A	ccessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
1	EQ5013	.56	KW									
2	EQ5013	.56	KW									
3	EQ5013	.56	KW									
4	EQ5001	1.5	KW									
5	EQ5020	0.1	KW									
6	EQ5020	0.3	KW									

----- Load Section Alternative #2 -----

Card 19- Load Alternative -Number Description

2 ECO M - INSTALL EMS FOR HVAC EQUIPMENT

Card 20	rd 20 General Room Parameters											
	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter	
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth	
Number	Number	Descrip	Length	Width	Туре	Height	Resistance	Height	Multiplier	Zone		
5	5	BLDG 2263	264	265	3	3	2.54	11				
15	15	DINING 2265	77	77	3	2.5	2.54	11				
20	20	BARR 2265	299	299	3	2.5	2.54	11				
25	25	ADMIN 2264	221	222	3	2.5	2.54	11				
30	30	BARR 2264	221	222	3	2.5	2.54	11				
35	35	ADMIN 2266	221	222	3	2.5	2.54	11				
40	40	BARR 2266	221	222	3	2.5	2.54	11				
45	45	ADMIN 2200	38	38.5	4	2	2.54	15.5				
50	50	CHAPEL 2200	117.5	117.5	4	2	1.80	38				
55	55	BLDG 2244	65	65	4	3	2.54	12				
60	60	ADMIN 2247	67	67	4	2	2.54	11				
65	65	CLASS 2247	43	43	4	2	2.54	11				
70	70	BLDG 2248	93.5	94	4	4	2.54	12				
75	75	BLDG 2250	93.5	94	4	4	2.54	12				
80	80	BLDG 2270	101.5	101.5	4	5	2.54	31				
85	85	BLDG 2272	75.5	75.5	4	2	2.54	12				
90	90	BLDG 2273	61.5	23	4	2	2.54	12				

Card 21 Thermostat Parameters										
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
5	78	50	78		70	70		ROOM	LIGHT30	YES
15	78	50	78		70	70		ROOM	LIGHT30	NO
20	78	50	78		70	70		ROOM	LIGHT30	YES
25	78	50	78		70	70		ROOM	LIGHT30	YES
30	78	50	78		70	70		ROOM	LIGHT30	YES
35	78	50	78		70	70		ROOM	LIGHT30	YES
40	78	50	78		70	70		ROOM	LIGHT30	YES
45	78	50	78		70	70		ROOM	LIGHT30	YES
50	78	50	78		70	70		ROOM	LIGHT30	YES
55	78	50	78		70	70		ROOM	LIGHT30	YES
60	78	50	78		70	70		ROOM	LIGHT30	YES
65	78	50	78		70	70		ROOM	LIGHT30	YES
70	78	50	78		70	70		ROOM	LIGHT30	YES
75	78	50	78		70	70		ROOM	LIGHT30	YES

Card 21 Thermostat Parameters										
	Cooling	Room	Cooling	Cooling	Heating	Heating	Heating	T'stat	Mass /	Carpet
Room	Room	Design	T'stat	T'stat	Room	T'stat	T'stat	Location	No. Hrs	On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
80	78	50	78		70	70		ROOM	LIGHT30	YES
85	78	50	78		70	70		ROOM	LIGHT30	YES
90	78	50	78		70	70		ROOM	LIGHT30	YES

Card 22	2			Roof Para	meters				
		Roof							
Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
5	1	NO	164	164	.09	37		80	
20	1	NO	165	166	.09	37		80	
30	1	NO	165	166	.09	37		80	
40	1	NO	165	166	.09	37		80	
45	1	YES			0.12	20			
50	1	NO	81	81	0.05	37			
55	1	YES			0.14	37			
60	1	NO	55	53	0.14	37			
65	1	YES			0.14	37			
70	1	NO	66	66	0.14	37			
75	1	NO	66	66	0.14	37			
80	1	YES			0.20	37			
85	1	NO	60	60.5	0.14	37			
90	1	YES			0.14	37			

Card 24				Wall F	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
5	1	924	11	.49	74	0			
5	2	414	11	.49	74	90			
5	3	924	11	.49	74	180			
5	4	414	11	.49	74	270			
15	1	309	11	.41	94	0			
20	1	810	11	.41	94	0			
20	2	243	11	.41	94	90			
20	3	810	11	.41	94	180			
20	4	243	11	.41	94	270			
25	1	357	11	.41	94	0			
25	2	81	11	.41	94	90			
25	3	357	11	.41	94	180			
25	4	81	11	.41	94	270			
30	1	714	11	.41	94	0			
30	2	162	11	.41	94	90			
30	3	714	11	.41	94	180			

Card 24	·			Wall P	arameters				
					Wall				Ground
Room	Wall	Wall	Wall	Wall	Constuc	Wall	Wall	Wall	Reflectance
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier
30	4	162	11	.41	94	270			
35	1	357	11	.41	94	0			
35	2	81	11	.41	94	90			
35	3	357	11	.41	94	180			
35	4	81	11	.41	94	270			
40	1	714	11	.41	94	0			
40	2	162	11	.41	94	90			
40	3	714	11	.41	94	180			
40	4	162	11	.41	94	270			
45	1	68	15.5	0.22	62	0			
45	2	41	15.5	0.22	62	90			
45	3	34	15.5	0.22	62	180			
45	4	34	15.5	0.22	62	270			
50	1	86	38	0.22	62	0			
50	2	59	38	0.22	62	90			
50	3	100	38	0.22	62	180			
50	4	61.5	38	0.22	62	270			
55	1	130	12	0.26	88	0			
55	2	38	12	0.26	88	90			
55	3	130	12	0.26	88	180			
55	4	38	12	0.26	88	270			
60	1	99	11	0.26	88	0			
60	2	53	11	0.26	88	90			
60	3	99	11	0.26	88	180			
60	4	53	11	0.26	88	270			
65	1	44	11	0.26	88	0			
65	2	43	11	0.26	88	90			
65	3	44	11	0.26	88	180			
65	4	43	11	0.26	88	270			
70	1	34	24	0.26	88	0			
70	2	145	24	0.26	88	90			
70	3	34	24	0.26	88	180			
70	4	145	24	0.26	88	270			
75	1	34	24	0.26	88	0			
75	2	145	24	0.26	88	90			
75	3	34	24	0.26	88	180			
75	4	145	24	0.26	88	270			
80	1	58	38	0.30	88	0			
80	2	138	38	0.30	88	90			
80	3	66	38	0.30	88	180			
80	4	138	38	0.30	88	270			
85	1	76	12	0.26	88	0			
85	2	46.5	12	0.26	88	90			
85	3	76	12	0.26	88	180			
85	4	46.5	12	0.26	88	270			
90	1	61.5	12	0.26	88	0			
90	2	23	12	0.26	88	90			

0.26

0.26

3 61.5

Card 25					W	all/Glass Par	ameters				
				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance
5	1	3	6	97	1.1	.67					
5	2			16	.63	1					•
5	3			32	.57	1					
5	4			16	.63	1					
15	1	3	6	35	1.1	.67					
20	1	3	6	82	1.1	.67					
20	2	3	6	27	1.1	.67					
20	3	3	6	96	1.1	.67	3				
20	4	3	6	27	1.1	.67					
25	1	3	6	41	1.1	.67					
25	2	3	6	9	1.1	.67					
25	3	3	6	48	1.1	.67	3				
25	4	3	6	9	1.1	.67					
30	1	3	6	82	1.1	.67					
30	2	3	6	18	1.1	.67					
30	3	3	6	96	1.1	.67	3				
30	4	3	6	18	1.1	.67					
35	1	3	6	41	1.1	.67					
35	2	3	6	9	1.1	.67					
35	3	3	6	48	1.1	.67	3				
35	4	3	6	9	1.1	.67					
40	1	3	6	82	1.1	.67					
40	2	3	6	18	1.1	.67					
40	3	3	6	96	1.1	.67	3				
40	4	3	6	18	1.1	.67					
45	1	10	4	4	1.1	1					
45	2	10	4	2	1.1	1					
45	3	10	4	.5	1.1	1					
45	4	10	4	1	1.1	1					
50	1			5.8	1.1	1					
50	2			15.6	1.1	1					
50	3			.4	1.1	1					
50	4			16.7	1.1	1					
55	1	6	3	7	1.1	1	4				
55	2	6	3	3	1.1	1	4				
55	3	6	3	8	1.1	1	4				
55	4	6	3	4	1.1	1	4				
60	1			7.5	1.1	1					

				Pct Glass			External	Internal	Percent		Inside
Room	Wall	Glass	Glass	or No. of	Glass	Shading	Shading	Shading	Solar to	Visible	Visible
Number	Number	Length	Width	Windows	U-Value	Coefficient	Type	Type	Ret. Air	Transmittance	Reflectance
60	2			2.4	1.1	1					
60	3			7.5	1.1	1					
60	4			20.6	1.1	1					
65	1	5.5	2.5	4	1.1	1					
65	2	5.5	2.5	3	1.1	1					
65	3	5.5	2.5	4	1.1	1					
70	1	6.5	3	2	1.1	1					
70	2	6.5	3	10	1.1	1	5				
70	3	6.5	3	2	1.1	1					
70	4	6.5	3	10	1.1	1	5				
75	1	6.5	3	2	1.1	1					
75	2	6.5	3	10	1.1	1	5				
75	3	6.5	3	2	1.1	1					
75	4	6.5	3	10	1.1	1	5				
85	1	6	3	21	1.1	1					
85	2	6	3	12	1.1	1					
85	3	6	3	13	1.1	1					
85	4	6	3	12	1.1	1					
90	1	6	4	4	1.1	1	5				
90	2	6	4	2	1.1	1	5				
90	3	6	4	4	1.1	1					
90	4	6	4	2	1.1	1	5				

Card 26				S	chedules ·					
Room					Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	Lights	Ventilation	Infiltration	Minimum	Fans	Fan	Fan	Exhaust	Controls
5	FSHOFFIC	FSHOFFIC				DAYSCHED				
15	FSHDINP	FSHDINL				DNGFANSC				
20	FSHBARRP	FSHBARRL				BARRSCHD				
25	FSHOFFIC	FSHOFFIC				DAYSCHED				
30	FSHBARRP	FSHBARRL				BARRSCHD				
35	FSHOFFIC	FSHOFFIC				DAYSCHED				
40	FSHBARRP	FSHBARRL				BARRSCHD				
45	FSHOFFIC	FSHOFFIC				DAYSCHED				
50	FSHCHAPP	FSHCHAPL				CRCHSCHD				
55	FSHLIB	AVAIL								
60	FSHOFFIC	FSHOFFIC				DAYSCHED				
65	FSHCLASP	FSHCLASL				DAYSCHED				
70	FSHOFFIC	FSHOFFIC				DAYSCHED				
75	FSHOFFIC	FSHOFFIC				DAYSCHED				
80	FSHTHEAP	FSHTHEAL				THESCHED				
85	FSHOFFIC	FSHOFFIC				DAYSCHED				
90	FSHOFFIC	FSHOFFIC				DAYSCHED				

Card 27			• • • • • • • • • • • • • • • • • • • •		Peopl	le and Ligh	ts				
							Lighting		Percent	Daylig	hting
Room	People	People	People	People	Lighting	Lighting	Fixture	Ballast	Lights to	Reference	Reference
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Ret. Air	Point 1	Point 2
5	250	PEOPLE	250	200	2.5	WATT-SF	ASHRAE2				
15	400	PEOPLE	275	275	1.1	WATT-SF	ASHRAE2				
20	215	PEOPLE	250	200	. 8	WATT-SF	ASHRAE2				
25	40	PEOPLE	250	200	1.7	WATT-SF	ASHRAE2				
30	350	PEOPLE	250	200	.8	WATT-SF	ASHRAE2				
35	40	PEOPLE	250	200	1.7	WATT-SF	ASHRAE2				
40	350	PEOPLE	250	200	.8	WATT-SF	ASHRAE2				
45	5	PEOPLE	250	200	2	WATT-SF	ASHRAE2				
50	550	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
55	12	PEOPLE	250	200	1.7	WATT-SF	ASHRAE2				
60	8	PEOPLE	250	200	1.6	WATT-SF	ASHRAE2				
65	30	PEOPLE	250	200	2.3	WATT-SF	ASHRAE2				
70	35	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
75	35	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
80	950	PEOPLE	225	105	1.0	WATT-SF	ASHRAE2				
85	35	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				
90	3	PEOPLE	250	200	1.5	WATT-SF	ASHRAE2				

Card 28	3			Mis	cellaneous	Equipment					
	Misc		Energy	Energy		Energy	Percent	Percent	Percent		
Room	Equipment	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant	Optional
Number	Number	Descrip	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
5	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
15	1	DIN. EQ.	1	WATT-SF	FSHDINL	NONE					
20	1	T.V. ETC.	1	WATT-SF	FSHBARRL	NONE					
25	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
30	1	T.V. ETC.	1	WATT-SF	FSHBARRL	NONE					
35	1	COMPUTER	1	WATT-SF	FSHOFFIC	NONE					
40	1	T.V. ETC.	1	WATT-SF	FSHBARRL	NONE					
45	1	OFFICE EQ	1.40	WATT-SF	FSHOFFIC	NONE					
50	1	CHAPEL EQ	0.25	WATT-SF	FSHCHAPL	NONE					
55	1	OFFICE EQ	2.7	WATT-SF	AVAIL	NONE					
60	1	OFFICE EQ	4.3	WATT-SF	FSHOFFIC	NONE					
65	1	CLASS EQ	0.5	WATT-SF	FSHCLASL	NONE					
70	1	OFFICE EQ	2.2	WATT-SF	FSHOFFIC	NONE					
75	1	OFFICE EQ	2.2	WATT-SF	FSHOFFIC	NONE					
85	1	OFFICE EQ	2.1	WATT-SF	FSHOFFIC	NONE					
90	1	OFFICE EQ	1.8	WATT-SF	FSHOFFIC	NONE					

Card 29)				- Room Air	flows					
		Ventil	ation			Infil	tration				
Room	Cooli	.ng	Heat	ing	Coo	CoolingHeatingRehe					
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	
5	20	CFM-P 20 CFM-P		CFM-P							
15	20	CFM-P	20	CFM-P							

		Venti	lation			Infil	tration			
Room	Coo	ling	Hea	ting	Coo	ling	Hea	ting	Reheat	Minimum-
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
20	20	CFM-P	20	CFM-P						
25	20	CFM-P	20	CFM-P						
30	20	CFM-P	20	CFM-P						
35	20	CFM-P	20	CFM-P						
40	20	CFM-P	20	CFM-P						
45	20	CFM-P	20	CFM-P						
50	15	CFM-P	15	CFM-P						
55	20	CFM-P	20	CFM-P						
60	20	CFM-P	20	CFM-P						
65	15	CFM-P	15	CFM-P						
70	20	CFM-P	20	CFM-P						
75	20	CFM-P	20	CFM-P						
80	15	CFM-P	15	CFM-P						
85	20	CFM-P	20	CFM-P						
90	20	CFM-P	20	CFM-P						

85	1	148.5	12	0.33	103	HRLYOADB
Card :	33			- External	Shading	

Room Partition Partition Partition Partition Const Temp Cooling Heating Adjacent Number Number Length Height U-Value Type Flag Temp Room No

	OVERHA	NG								
	Height				Left		Right	Adjacent		
Glass	Above	Projection	Glass	Projection	Projection	Projection	Projection	Building		
Height	Glass	Out	Width	Left	Out	Right	Out	Flag		
6	1	5								
6	2	3.5								
6.5	2	10								
	Glass Height 6	Height Glass Above Height Glass 6 1 6 2	Height Glass Above Projection Height Glass Out 6	Height Frojection Glass Height Glass Out Width 6 1 5 6 2 3.5	Height Frojection Glass Projection Height Glass Out Width Left 6 1 5 6 2 3.5	Height Formula Frojection Frojection Frojection Height Glass Out Width Left Out 6 1 5 6 2 3.5	Height For Formal Left Glass Above Projection Glass Projection Projection Projection Height Glass Out Width Left Out Right 6 1 5 5 5 6 2 3.5	Glass Above Projection Glass Projection Projection Projection Projection Height Glass Out Width Left Out Right Out 6 1 5 6 2 3.5		

------ System Section Alternative #2 -----

Card 39- System Alternative

Number Description

ECO M - AIRSIDE SYSTEMS

```
Card 40----- System Type -----
            -----OPTIONAL VENTILATION SYSTEM-----
System
            Ventil
                                                Fan
    System Deck Cooling Heating Cooling Heating Static
Set
Number Type
             Location SADBVh SADBVh Schedule Schedule Pressure
1
     SZ
2
     BPMZ
3
     BPMZ
4
     BPMZ
5
     FC
6
     SZ
     SZ
8
     BPMZ
9
     BPMZ
10
     BPMZ
11
     BPMZ
     FC
12
13
     FC
```

Card 41					Zone A	ssignmen	t					
System												
Set	Ref	#1	Ref	#2	Ref	#3	Ref	#4	Ref	#5	Ref	#6
Number	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	5	5										
2	15	20										
3	25	30										
4	35	40										
5	45	45										
6	50	50										
7	55	55										
8	60	65										
9	70	70										
10	75	75										
11	80	80										
12	85	85										
13	90	90										
2 3 4 5 6 7 8 9 10 11	15 25 35 45 50 55 60 70 75 80 85	20 30 40 45 50 55 65 70 75 80										

Card 42				Fan	SP an	d Duct P	arameters				
System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1	1.0										
2	1.0										
3	1.0										
4	1.0										
5	1.0										
6	1.0										
7	1.0										
8	1.0										
9	1.0										
10	1.0										

Card 42 Fan SP and Duct Parameters													
							Cool						
Set	Fan Mtr	Fan Mtr	Duct	Duct	Air								
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path		
12	1.0												
13	1.0												

System	Econ	Econ	Max Pct	Direct	Indirect	1st Stage				haust Air He		ery	
Set	Туре	On	Outside	Evap	Evap	Evap	Fan					Exh-Side	
Number	Flag	Point	Air	Cooling	Cooling	Cooling	Cycling	Stage 1			Stage 2		Stage 2
1	DRY-BULB	65	100						•	•		00030 1	beage 2
2	DRY-BULB	65	100										
3	DRY-BULB	65	100										
4	DRY-BULB	65	100										
6	DRY-BULB	65	100										

Card 45 Equipment Schedules													
	Main		Direct		Auxiliary		Main			Auxiliary			
Set	Cooling		Evap	Evap	Cooling	Heating	Preheat	Reheat	Mech.	Heating			
Number	Coil	Economizer	Coil	Coil	Coil	Coil	Coil	Coil	Humidity	_			
1	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG	-				
2	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG					
3	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG					
4	FTSAMCLG	AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG					
5						FTSAMHTG	FTSAMHTG	FTSAMHTG					
6		AVAIL				FTSAMHTG	FTSAMHTG	FTSAMHTG					
7						FTSAMHTG	FTSAMHTG	FTSAMHTG					
8						FTSAMHTG	FTSAMHTG	FTSAMHTG					
9	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG					
10	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG					
11	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG					
12	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG					
13	FTSAMCLG					FTSAMHTG	FTSAMHTG	FTSAMHTG					

Card 4	Card 46 EMS/BAS Schedules													
	Discrim	Night	Optimum		DU			Room HR						
Set	Control	Purge	Start	Stop	On Period	Pattern	Maximum	Exhaust	Exhaust					
Number	Schedule	Schedule	Schedule	Schedule	Schedule	Length	Off Time	Schedule	Schedule					
8			OPSTART	OPSTOP										
9			OPSTART	OPSTOP										
10			OPSTART	OPSTOP										
11			OPSTART	OPSTOP										
12			OPSTART	OPSTOP										
13			OPSTART	OPSTOP										

------ Equipment Section Alternative #2 -----

 Equipment
 Description / TOD Schedules

 Elec Consump
 Elec Demand
 Demand
 ---- Demand
 Limit
 ---- Demand

Card	Card 62 Cooling Equipment Parameters													
Cool	Equip	Num			NG		HEAT RECOVERY				Seq		Demand	
Ref	Code	Of	CapacityEnerg		gyCapacity		city	Energy		Order	Seg	Limit		
Num	Name	Units	Value	Units	Value	Units	Value	Units	Value	Units	Num	Туре	Number	
1	EQ1001L	1	657	TONS	598	KW								
2	ACC2	1	60	TONS	80.2	KW								
3	EQ1172L	1	20	TONS	37.7	KW								
4	EQ1130L	1	20	TONS	29	KW								
5	ACC2	1	57.5	TONS	79.5	KW								
6	EQ1130L	1	66.6	TONS	68.4	KW								
7	ACC1	1	40	TONS	52.9	KW								

Card	Card 63 Cooling Pumps and References													
	1CHILLED WATER													
Ref	Full Load	Full Load	Full Load	Full Load	Full Load	Full Load	over	Cold	Cooling	Misc.				
Num	Value	Units	Value	Units	Value	Units	Control	Storage	Tower	Access.				
1	74.6	KW	37.3	KW					1					
2	2.2	KW												
4			1.5	KW					2					
5	3.0	KW								4				
6			3.7	KW					3					
7	3.7	KW												

Card	64			Cooli	ng Equip	ment Optic	ns			
Cool		Load		Free		Cond	Cond		Cond Rej	
Ref	CM	Shed	Evap	Cooling	Heat	Entering	Min Oper	To Ref	To Ref	@ HW
Num	Reset	Economizer	Precool	Type	Source	Temp	Temp	Type	Number	Temp
2	10									
5	10									
7	10						,			

Card 65					Heating	Load Assign	ment				
Load	All Coil										
Assignment	Loads To	-Grou	p 1-	-Group 2-	-Group 3-	-Group 4-	-Group 5-	-Group 6-	-Group 7-	-Group 8-	-Group 9-
Reference	Heating Ref			Begin End							Begin End
1	1	1	4							_	-
2	4	5	6								
3	5	7	7								
4	6	8	8								
5	7	9	10								
6	8	11	11								
7	10	12	13								

Card 67	·				Hea	ating Equip	oment Pa	rameters -						
Heat	Equip	Number	HW Pmp				Energy		Seq	Switch				Demand
Ref	Code	Of	Full Ld		Cap'y		Rate		Order	over	Hot	Misc.		Limit
Number	Name	Units	Value	Units	Value	Units	Value	Units	Number	Control	Strg	Acc.	Cogen	Number
1	BLR2MOD	1	11.2	KW	2240	MBH	3000	MBH	1			1		
2	BLR2MOD	1	11.2	KW	2240	MBH	3000	MBH	2			2		
3	BLR2MOD	1	11.2	KW	2240	MBH	3000	MBH	3			3		
4	BOILERWT	1	1.5	KW	831.7	M BH	1050	MBH						
5	BOILERWT	1	1.5	KW	112.2	MBH	150	MBH				5		
6	STEAMBLR	1			79.9	MBH	197.2	MBH						
7	BOILERWT	1	0.2	KW	679	MBH	900	MBH				6		
8	BOILERWT	1	2.2	KW	550	MBH	750	MBH	1					
9	BOILERWT	1	2.2	KW	550	MBH	750	MBH	2					
10	BOILERWT	1	3.7	KW	388	MBH	525	MBH						

Card 69 System	• • • • • • • • • • • • • • • • • • • •		Fan Equip	ment Param	eters		
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
1	TYPFAN						
2	TYPFAN						
3	TYPFAN						
4	TYPFAN						
5	TYPFAN						
6	TYPFAN						
7	TYPFAN						
8	TYPFAN						

Alternative #2

Card 69			Fan Equip	ment Param	eters		
System							
Set	Cooling	Heating	Return	Exhaust	Auxiliary	Room	Optional
Number	Fan	Fan	Fan	Fan	Supply	Exhaust	Ventilation
9	TYPFAN						
10	TYPFAN						
11	TYPFAN						
12	TYPFAN						
13	TYPFAN						

Card 70				Fan	Equip	ment K	W Over	rides				
		MAIN S	YSTEM-		OTH	ER SYS	TEM	D	EMAND	LIMIT	PRIORI	TY
System	Cool	Heat	Ret	Exh	Aux	Room	0pt				Room	Opt
Set	Fan	Fan	Fan	Fan	Sup	Exh	Vent	Cool	Heat	Aux	Exh	Vent
Number	KW	KW	KW	KW	KW	KW	KW	Fan	Fan	Fan	Fan	Fan
1	29.8											
7	2.2											
9	5.2											
10	5.2											
11	14.9											
13	0.6											

Card 71-			Base	Utility F	arameters				
Base	Base	Hourly	Hourly			Equip	Demand		
Utility	Utility	Demand	Demand	Schedule	Energy	Reference	Limiting	Entering	Leaving
Number	Descrip	Value	Units	Code	Type	Number	Number	Temp	Temp
1	PIPE-PUMP HT LOS	31.8	TONS	FTSAMCLG	CHILL-LD	1			
2	PIPE-PUMP HT LOS	1.7	TONS	FTSAMCLG	CHILL-LD	2			
3	PIPE-PUMP HT LOS	0.3	TONS	FTSAMCLG	CHILL-LD	3			
4	PIPE-PUMP HT LOS	0.4	TONS	FTSAMCLG	CHILL-LD	4			
5	PIPE-PUMP HT LOS	1.7	TONS	FTSAMCLG	CHILL-LD	5			
6	PIPE-PUMP HT LOS	1.4	TONS	FTSAMCLG	CHILL-LD	6			
7	PIPE-PUMP HT LOS	1.5	TONS	FTSAMCLG	CHILL-LD	7			
8	PIPE LOSS	130.7	MBH	FTSAMHTG	HOT-LD	1			
9	PIPE LOSS	18.1	MBH	FTSAMHTG	HOT-LD	4			
10	PIPE LOSS	6.1	MBH	FTSAMHTG	HOT-LD	6			
11	PIPE LOSS	9.3	MBH	FTSAMHTG	HOT-LD	7			
12	PIPE LOSS	27.7	MBH	FTSAMHTG	HOT-LD	8			
13	PIPE LOSS	5.9	MBH	FTSAMHTG	HOT-LD	10			

Card 7	4			Condenser	/ Coolin	g Tower	Parameters				
	Cooling			Energy	Energy				Percent		Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
1	EQ5100			29.8	KW	T-WATER	CTOWER	2			

Card 7	4			Condenser	/ Cooling	Tower Par	rameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Туре	Туре	Cells	Low Spd	Value	Units
2	EQ5200			1.5	KW	T-WATER	CNDFAN	1			
3	EQ5200			2.2	KW	T-WATER	CNDFAN	1			

Card	75				Misce	ellaneous A	ccessory					
	#1				#2				#3			
Misc	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched	Equip	Energy	Energy	Sched
Ref	Code	Value	Units	Code	Code	Value	Units	Code	Code	Value	Units	Code
1	EQ5013	.56	KW									
2	EQ5013	.56	KW									
3	EQ5013	.56	KW									
4	EQ5001	1.5	KW									
5	EQ5020	0.1	KW									
6	EQ5020	0.3	KW									

------ Load Section Alternative #3 -----

Card 19- Load Alternative -

Number Description

ECO N - EXISTING BUILDINGS

	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimete
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
5	5	BLDG 2263	264	265	3	3	2.54	11			
15	15	DINING 2265	77	77	3	2.5	2.54	11			
20	20	BARR 2265	299	299	3	2.5	2.54	11			
25	25	ADMIN 2264	221	222	3	2.5	2.54	11			
30	30	BARR 2264	221	222	3	2.5	2.54	11			
35	35	ADMIN 2266	221	222	3	2.5	2.54	11			
40	40	BARR 2266	221	222	3	2.5	2.54	11			
45	45	ADMIN 2200	38	38.5	4	2	2.54	15.5			
50	50	CHAPEL 2200	117.5	117.5	4	2	1.80	38			
55	55	BLDG 2244	65	65	4	3	2.54	12			
60	60	ADMIN 2247	67	67	4	2	2.54	11			
65	65	CLASS 2247	43	43	4	2	2.54	11			
70	70	BLDG 2248	93.5	94	4	4	2.54	12			
75	75	BLDG 2250	93.5	94	4	4	2.54	12			
80	80	BLDG 2270	101.5	101.5	4	5	2.54	31			
85	85	BLDG 2272	75.5	75.5	4	2	2.54	12			

----- Equipment Section Alternative #3 -----Card 59----- Equipment Description / TOD Schedules -----Elec Consump Elec Demand Demand ---- Demand Limit ---Alternative Time of Day Time of Day Limit Temperature Number Schedule Schedule Max KW Alternative Description Schedule Drift ECO N1 - WATERSIDE SYSTEMS 3 Card 60----- Cooling Load Assignment-----Load All Coil Cooling Asgn Loads To Equipment -Group 1- -Group 2- -Group 3- -Group 4- -Group 5- -Group 6- -Group 7- -Group 8- -Group 9-Ref Cool Ref Sizing Begin End 1 13 Card 62----- Cooling Equipment Parameters Demand Ref Code --Capacity-- ----Energy---- Order Seq Limit Of --Capacity-- ---Energy----Num Name Units Value Units Value Units Value Units Value Units Num Type Number 1 EQ1008S 1 270 TONS 154 KW 1 2 EQ1008L 1 545 TONS 300 KW 2 Card 63----- Cooling Pumps and References -----Cool ---CHILLED WATER---- ----CONDENSER----- ---HT REC or AUX---- Switch-Ref Full Load Full Load Full Load Full Load Full Load Full Load over Cold Cooling Misc. Num Value Units Value Units Value Units Control Storage Tower Access. 1 29.8 KW 14.9 KW 2 29.8 KW 29.8 KW 1 Card 71------ Base Utility Parameters -----Base Base Hourly Hourly Equip Demand Utility Utility Demand Demand Schedule Energy Reference Limiting Entering Leaving Value Units Code Type Number Number Temp Number Descrip Temp 1 DISTRIBUTION LOS 38.8 TONS FTSAMCLG CHILL-LD 1 DISTRIBUTION LOS 4.8 TONS FTSAMHTG CHILL-LD 1

ard	74													
	Coolin	g			Energy	Energy			Number	Percent	Low Spo	d Low	Spd	
ower	Tower	Capa	city	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Ener	gy	
ef	Code	Valu	e	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Unit	s	
	EQ5100	ı			14.9	KW	T-WATER	CTOWER	. 1					
	EQ5100	ı			18.6	KW	T-WATER	CTOWER	. 1					
				oment Secti										
aru .				Elec Deman		Descript	1011 / 1010	schedul	es					
1+0~				Time of Da							Dei			
umbe:		Schedule	_	Schedule	=	Alterna	tive Doco	cintian			Cabadur	_	eratur .:66	e
unbe:	•	-cuedate		ochedute	riaX XW		tive Desc: - WATERSII				Schedul	e Di	rift	
oad	All Coi Loads T	l Cooli Co Equip	ng ment	-Group 1-	-Group 2-	-Group	3Gro	up 4	Group 5-	-Group	6Gro	up 7-	-Group	8Group End Begin
	Cool Re			1 13										
ard	1 62 Equip	 Num		1 13	Cc	ooling Eq	uipment Pa	arameter	T RECOVE	RY		Seq		Demand
ard cool	62	Num Of	 Caj	1 13	Cc	ooling Eq	ruipment Pa Caj	arameter HEA pacity	T RECOVE	RY Energy-		Seq Order	Seq	Demand Limit
ard cool ef	1 62 Equip Code	Num Of	 Caj	1 13	Co LING	ooling Eq	ruipment Pa Caj	arameter HEA pacity	T RECOVE	RY Energy-		Seq Order Num	Seq	Demand
Card Cool : Ref	1 62 Equip Code Name	Num Of Units	Caj	1 13	Co LING Ene Value	ooling Eq rgy Units	ruipment Pa Caj	arameter HEA pacity	T RECOVE	RY Energy-		Seq Order	Seq	Demand Limit
Cool: Ref Jum Card Cool Ref	1 62 Equip Code Name EQ1009 EQ1009	Num Of Units 1 1		1 13	Co LING Value 154 300 Cooling F	ooling Eq wrgy Units kw KW	uipment Pr Caj Valu Valu Referenc REC or AU	arameterHEA pacity e Units es X S Load c	T RECOVE Va Switch- Swer	RY Energy- lue Ur	Cooling	Seq Order Num 1 2	Seq Type	Demand Limit
Card Cool Card Cool Ref	1 62 Equip Code Name EQ1009 EQ1009CHILI Full Los	Num Of Units 1 1 CLED WATER ad Full Units		1 13	Co LING Value 154 300 Cooling F	ooling Eg Units KW KW	uipment PCaj Valu Referenc REC or AU	arameterHEA pacity e Units es X S Load c	T RECOVE Va Switch- Swer	RYEnergy- lue Ur	Cooling	Seq Order Num 1 2	Seq Type	Demand Limit
ard cool card cool tef	1 62 Equip Code Name EQ1009 EQ1009 63 CHILI Full Loa Value	Num Of Units 1 1 CLED WATER ad Full Units		1 13	Cooling F	ooling Eg Units KW KW	uipment PCaj Valu Referenc REC or AU	arameterHEA pacity e Units es X S Load c	T RECOVE Va Switch- Swer	RYEnergy- lue Ur	Cooling	Seq Order Num 1 2	Seq Type	Demand Limit
ard cool tef fard Cool tef Hum	1 62 Equip Code Name EQ1009 63CHILI Full Loa Value 29.8 29.8	Num Of Units 1 1 Units CED WATER ad Full Units KW KW		1 13	Cooling F NSER Full Load KW KW	ooling Eg	uipment PCaj Valu Referenc REC or AU Load Full Unit	arameterHEA pacity e Units Es X S Load c s (1	T RECOVE Va Switch- over Control	RYEnergy- lue Ur Cold Storage	Cooling Tower 1	Seq Order Num 1 2	Seq Type	Demand Limit
ard cool cool cool cool cool cool	1 62 Equip Code Name EQ1009 63 CHILI Full Loa Value 29.8 29.8	Num Of Units 1 1 LED WATER ad Full Units KW KW		1 13	Cooling F NSER Full Load KW KW	ooling Eg	uipment PCaj Valu Referenc REC or AU Load Full Unit	arameterHEA pacity e Units Es X S Load c s (1	Witch- Down	RYEnergy- lue Ur Cold Storage	Cooling Tower 1	Seq Order Num 1 2	Seq Type	Demand Limit
Card Cool :	1 62 Equip Code Name EQ1009 63 CHILI Full Loa Value 29.8 29.8	Num Of Units 1 1 Units WATER ad Full Units KW KW		1 13	Cooling F NSER Full Load Units KW KW	ooling Eq	uipment PCaj Valu Referenc REC or AU Unit	arameterHEA pacity e Units es S Load c s 1 1 S Equip	Witch- control	RYEnergy- lue Ur Cold Storage	Cooling Tower 1	Seq Order Num 1 2	Seq Type	Demand Limit
ard cool :	1 62 Equip Code Name EQ1009 EQ1009 63 CHILI Full Los Value 29.8 71 Base ty Util	Num Of Units 1 1 Units WATER Ad Full Units KW KW		1 13	Cooling F NSER Full Load Units KW KW	ooling Eq	uipment PCaj Valu Referenc REC or AU Load Full Unit	arameterHEA pacity e Units es S Load c s 1 1 s	Witch- control	RYEnergy- lue Ur Cold Storage	Cooling Tower 1	Seq Order Num 1 2 Misc. Access	Seq Type	Demand Limit
Card Cool :	1 62 Equip Code Name EQ1009 EQ1009 63 CHILI Full Los Value 29.8 71 Base ty Util	Num Of Units 1 1 Units WATER ad Full Units KW KW		1 13	Cooling F NSER Full Load Units KW KW	ooling Eq	uipment PCaj Valu Referenc REC or AU Unit	arameterHEA pacity e Units es S Load c s 1 1 s	Switch- control Control Control Control	RY	Cooling Tower 1	Seq Order Num 1 2 Misc. Access	Seq Type	Demand Limit
Card Cool :	1 62 Equip Code Name EQ1009 EQ1009 63 CHILI Full Loa Value 29.8 29.8 71 Base ty Util r Desc	Num Of Units 1 1 Units WATER Ad Full Units KW KW		1 13	Cooling F NSER Full Load Units KW KW	ooling Eq	uipment PCaj Valu Referenc REC or AU Unit Parameter	es Load C S Equip Refer Numbe	Switch- control Control Control Control	RY	Cooling Tower 1 2	Seq Order Num 1 2 Misc. Access	Seq Type	Demand Limit

Card 72-- Switchover Controls -----

Outside

Control Load Load Air Sched
Reference Value Units DB Code

1 270 TONS

Card 7	4			Condenser	/ Coolin	g Tower Pa	rameters				
	Cooling			Energy	Energy			Number	Percent	Low Spd	Low Spd
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Type	Cells	Low Spd	Value	Units
1	EQ5100			14.9	KW	T-WATER	CTOWER	1			
2	EQ5100			18.6	KW	T-WATER	CTOWER	1			

	;	Elec Con	sump	Elec Demand	Demand					De	mand Li	imit	-
lter	native	Time of	Day	Time of Day	Limit						Temp	peratur	e
lumbe	r	Schedule		Schedule	Max KW	Alternati	ve Descrip	tion		Schedul	e I	Orift	
						ECO N3 -	WATERSIDE	SYSTEMS					
						Coolir	ng Load Ass	ignment					
	All Coi		-										
				-Group 1-						_	_	_	
lef		f Sizin	g	Begin End	Begin End	. Begin Er	nd Begin E	and Begin F	End Begin	End Begi	n End	Begin	End Begin
	1			1 13									
ard	62				Co	oling Equi	ipment Para	ameters					****
	Equip	Num		C00I				HEAT REC			Seq		Demand
ef	Code	Of	Car	pacity	Ene	rgy	Capac	ity	Energ	y	Order	Seq	Limit
um	Name	Units	Value	e Units	Value	Units	Value	Units	_	Units	Num	•	Number
	YSCRW22	1	270	TONS	167	KW					1		
:	YSCRW22	1	545	TONS	349	KW					2		
					_	_							
ool	CHILL	ED WATER		CONDEN	ISER	HT RI	EC or AUX-	Switch	-				
Cool Ref	CHILL	ED WATER d Full	Load	CONDEN	SER Full Load	HT RI	EC or AUX-	Switch oad over	- Cold	Cooling	Misc.		
Cool Ref Num	CHILL Full Loa Value	ED WATER d Full Units	Load	CONDEN Full Load Value	SER Full Load Units	HT RI	EC or AUX-	oad over	-	Cooling Tower			
Cool Ref Num	CHILL Full Loa Value 29.8	ED WATER d Full Units KW	Load	Full Load Value 14.9	NSER Full Load Units KW	HT RI	EC or AUX-	oad over Contro	- Cold	Cooling Tower	Misc.		
Cool Ref Num	CHILL Full Loa Value	ED WATER d Full Units	Load	CONDEN Full Load Value	SER Full Load Units	HT RI	EC or AUX-	oad over	- Cold	Cooling Tower	Misc.		
Cool Ref Num	CHILL Full Loa Value 29.8	ED WATER d Full Units KW	Load	Full Load Value 14.9	NSER Full Load Units KW	HT RI	EC or AUX-	oad over Contro	- Cold	Cooling Tower	Misc.		
Cool Ref Tum	CHILL Full Loa Value 29.8	ED WATER d Full Units KW	Load	Full Load Value 14.9	NSER Full Load Units KW	HT RI	EC or AUX-	oad over Contro	- Cold	Cooling Tower	Misc.		
Cool Ref Tum	CHILL Full Loa Value 29.8 29.8	ED WATER d Full Units KW KW	Load	Full Load Value 14.9	NSER Full Load Units KW KW	HT Ri I Full Loa Value	C or AUX ad Full Lo Units	Switch pad over Control 1	Cold Storage	Cooling Tower 1	Misc. Acces	s.	
Cool lef Jum	CHILL Full Loa Value 29.8 29.8	ED WATER d Full Units KW KW	Load	CONDEN Full Load Value 14.9 29.8	NSER Full Load Units KW KW	HT Ri I Full Loa Value	C or AUX ad Full Lo Units	Switch pad over Control 1	Cold Storage	Cooling Tower 1	Misc. Acces	s.	
Cool Ref Jum	CHILL Full Loa Value 29.8 29.8	ED WATER d Full Units KW KW	Load	CONDEN Full Load Value 14.9 29.8	NSER Full Load Units KW KW Base Hourly	HT Ri I Full Loa Value	CC or AUX ad Full Lo Units	Switch oad over Contro	Cold Storage	Cooling Tower 1 2	Misc. Acces	s. 	
Cool Ref Jum	CHILL Full Loa Value 29.8 29.8 71 Base	ED WATER d Full Units KW KW	Load	CONDEN Full Load Value 14.9 29.8	TSER Full Load Units KW KW Base Hourly Demand	HT Ri Full Loa Value	CC or AUX ad Full Lo Units	Switch coad over Control 1	Cold Storage	Cooling Tower 1 2	Misc. Acces	s. 	
cool lef lum	CHILL Full Loa Value 29.8 29.8 71 Base ity Util er Description	ED WATER d Full Units KW KW	Load	CONDEN Full Load Value 14.9 29.8 Hourly Demand	SER Full Load Units KW KW Base Hourly Demand Units	HT Ri Full Loa Value Utility Pa Schedule Code	EC or AUX ad Full Lo Units arameters	Control Control 1 Equip Reference Number	Cold Storage Demand Limiting	Cooling Tower 1 2	Misc. Acces	s. 	
cool ef fum card sase Jtili	CHILL Full Loa Value 29.8 29.8 71 Base Lty Util er Desc	ED WATER d Full Units KW KW	Load	CONDEN Full Load Value 14.9 29.8 Hourly Demand Value	Full Load Units KW KW Base Hourly Demand Units TONS	HT Ri Full Loa Value Utility Pa Schedule Code FTSAMCLG	EC or AUX ad Full Lo Units arameters Energy Type	Control Control L Equip Reference Number	Cold Storage Demand Limiting	Cooling Tower 1 2	Misc. Acces	s. 	

Card 7	4			Condenser	/ Coolin	g Tower Pa	rameters						
	Cooling			Energy	Energy						d Low S		
Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energ	У	
Ref	Code	Value	Units	Value	Units	Туре	Type	Cells	Low Spd	l Value	Units		
1	EQ5100			14.9	KW	T-WATER	CTOWER	1					
2	EQ5100			18.6	KW	T-WATER	CTOWER	1					
							÷						
	•••••	Equi	pment Secti	ion Alter	native #2								
Card 5	9			Equipment	Descript	ion / TOD	Schedule	s					
	Ele	ec Consump	Elec Demar	nd Demand						Det	mand Limi	t	
Altern	native Tir	me of Day	Time of Da	ay Limit							Temper	ature	
Number	: Sch	nedule	Schedule	Max KW	Alterna	tive Descr	iption			Schedule	e Dri	ft	
2					ECO N4	- WATERSID	E SYSTEM	IS					
Card 6	50				Cool	ing Load A	ssignmen	ıt					
	All Coil												
Asgn	Loads To	Equipment	-Group 1-	-Group 2	Group	3Grou	ip 4 G	roup 5-	-Group	6Gro	up 7G	roup 8-	-Group 9-
Ref	Cool Ref	Sizing	Begin End	Begin En	d Begin	End Begir	End Be	gin End	Begin E	and Begin	n End Be	gin End	Begin End
1	1		1 13										
						-							
Cool I	Equip 1	Num	CO	OLING			HEAT	RECOVE	RY		Seq	Der	mand
Cool I	Equip 1 Code (Num OfCa	pacity	OLING En	ergy	 Car	HEAT	RECOVE	RY Energy-		Seq Order S	Der Seq Lir	mand mit
Cool I Ref (Equip I Code (Name I	Num OfCa Units Valu	pacity te Units	OLING En Value	ergy Units	 Car	HEAT	RECOVE	RY Energy-		Seq Order S Num T	Der	mand mit
Cool I Ref (Equip 1 Code (Num OfCa Units Valu	pacity	OLING En	ergy	 Car	HEAT	RECOVE	RY Energy-		Seq Order S	Der Seq Lir	mand mit
Cool I Ref (Equip I Code (Name I	Num OfCa Units Valu	pacity te Units	OLING En Value	ergy Units	 Car	HEAT	RECOVE	RY Energy-		Seq Order S Num T	Der Seq Lir	mand mit
Cool I Ref (Num I 1 I	Equip 1 Code 6 Name 1 EDC80TON 1	Num OfCa Units Valu 1 815	pacity te Units TONS	OLINGEn Value 5379	ergy Units MBH	 Car Value	HEAT pacity e Units	RECOVER	RY Energy- lue Ur	nits	Seq Order S Num T	Der Seq Lir	mand mit
Cool I	Equip 1	Num DfCa Units Valu 1 815	pacity pacity e Units TONS	DLINGEn Value 5379	ergy Units MBH Pumps and	 Car Value	e Units	RECOVER	RY Energy- lue Ur	nits	Seq Order S Num T	Der Seq Lir	mand mit
Cool I	Equip 1 Code (Name 1 EDC80TON :	Num OfCa Units Valu 1 815	COM	OLING Value 5379 - Cooling	ergy Units MBH Pumps and	Car Value I Reference REC or AU	e Units	RECOVER Va:	RY -Energy- lue Ur	 nits	Seq Order S Num T 1	Der Seq Lir	mand mit
Cool I Ref (Num I I Card (Cool - Ref I	Equip 1 Code 6 Name 1 EDC80TON :	Num OfCa Units Valu 1 815 WATER Full Load	TONS TONS COND	OLING Value 5379 - Cooling ENSER Full Loa	ergy Units MBH Pumps andHT d Full I	 Value Value Reference REC or AU Oad Full	e Units SS Load ov	recover Va.	RY Energy- lue Ur	Cooling	Seq Order S Num T 1	Der Seq Lir	mand mit
Cool I Ref (Num I I I I I I I I I I I I I I I I I I I	Equip 1 Code 6 Name 1 EDC80TON :	Num OfCa Units Valu 1 815	COM	OLING Value 5379 - Cooling	ergy Units MBH Pumps and	Car Value I Reference REC or AU	e Units SS Load ov	recover Va.	RY -Energy- lue Ur	Cooling	Seq Order S Num T 1	Der Seq Lir	mand mit
Cool I Ref (Num I I I I I I I I I I I I I I I I I I I	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load	Num OfCa Units Valu 1 815 WATER Full Load Units	TONS TONS COND	OLING Value 5379 - Cooling ENSER Full Loa Units	ergy Units MBH Pumps andHT d Full I	 Value Value Reference REC or AU Oad Full	e Units SS Load ov	recover Va.	RY Energy- lue Ur	Cooling	Seq Order S Num T 1	Der Seq Lir	mand mit
Cool I Ref (Num I I I I I I I I I I I I I I I I I I I	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load	Num OfCa Units Valu 1 815 WATER Full Load Units	TONS TONS COND	OLING Value 5379 - Cooling ENSER Full Loa Units	ergy Units MBH Pumps andHT d Full I	 Value Value Reference REC or AU Oad Full	e Units SS Load ov	recover Va.	RY Energy- lue Ur	Cooling	Seq Order S Num T 1	Der Seq Lir	mand mit
Cool in Ref (Num in I in	Equip 1 Code 6 Name 1 EDC80TON :	Num OfCa Units Valu 1 815 WATER Full Load Units KW	TONS TONS TONS TONS TONS TONS	OLING Value 5379 - Cooling ENSER Full Loa Units KW	ergy Units MBH Pumps andHT d Full I Value	 Value Value Reference REC or AU Oad Full Units	e Units Ses C Sw Load ov	Vitch- ver (RYRY	Cooling Tower	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Cool I	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load Value 44.7	Num OfCa Units Valu 1 815 WATER Full Load Units KW	TONS TONS TONS TONS TONS TONS	OLING Value 5379 - Cooling ENSER Full Loa Units KW	ergy Units MBH Pumps andHT d Full I Value	 Value Value Reference REC or AU Oad Full Units	e Units SSSW Load ov	Value (RYRY	Cooling Tower	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load Value 44.7	Num OfCa Units Valu 1 815 WATER Full Load Units KW	pacity te Units TONS TONS COND Full Load Value 44.7	CLING Value 5379 - Cooling ENSER Full Loa Units KW	ergy Units MBH Pumps andHT d Full I Value		cally to active the control of the c	Value (Control)	RYRY	Cooling Tower	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load Value 44.7 71 Base ty Utility	Num OfCa Units Valu 1 815 WATER Full Load Units KW	pacity te Units TONS TONS CONDI Full Load Value 44.7 Hourly Demand	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand	ergy Units MBH Pumps andHT d Full I Value Utility Schedule		e Units Se Units Control Co	Value	RY	Cooling Tower 1	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load Value 44.7 71 Base ty Utility r Descrip	Num OfCa Units Valu 1 815 WATER Full Load Units KW	pacity te Units TONS TONS COND Full Load Value 44.7 Hourly Demand Value	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand Units	ergy Units MBH Pumps andHT d Full I Value Utility Schedule Code		e Units Units Control Contr	Value	RY	Cooling Tower	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 63CHILLED Full Load Value 44.7 71 Base ty Utilit; r Descrip	Num OfCa Units Valu 1 815 WATER Full Load Units KW y p BUTION LOS	TONS TONS TONS TONS TONS CONDITION Full Load Value 44.7 Hourly Demand Value 38.8	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand Units TONS	ergy Units MBH Pumps andHT d Full I Value Utility Schedule Code FTSAMCLG		e Units Ses Load over Equip Reference Number	Value	RY	Cooling Tower 1	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 63CHILLED Full Load Value 44.7 71 Base ty Utilit; r Descrip	Num OfCa Units Valu 1 815 WATER Full Load Units KW	pacity te Units TONS TONS COND Full Load Value 44.7 Hourly Demand Value	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand Units	ergy Units MBH Pumps andHT d Full I Value Utility Schedule Code FTSAMCLG		e Units Ses Load over Equip Reference Number	Value	RY	Cooling Tower 1	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 63CHILLED Full Load Value 44.7 71 Base ty Utilit; r Descrip	Num OfCa Units Valu 1 815 WATER Full Load Units KW y p BUTION LOS	TONS TONS TONS TONS TONS CONDITION Full Load Value 44.7 Hourly Demand Value 38.8	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand Units TONS	ergy Units MBH Pumps andHT d Full I Value Utility Schedule Code FTSAMCLG		e Units Ses Load over Equip Reference Number	Value	RY	Cooling Tower 1	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Card Card Card Card Card Card Card	Equip 1 Code 6 Name 1 EDC80TON : 63CHILLED Full Load Value 44.7 71 Base ty Utilit; r Descrip	Num OfCa Units Valu 1 815 WATER Full Load Units KW y p BUTION LOS	TONS TONS TONS TONS TONS CONDITION Full Load Value 44.7 Hourly Demand Value 38.8	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand Units TONS	ergy Units MBH Pumps andHT d Full I Value Utility Schedule Code FTSAMCLG		e Units Ses Load over Equip Reference Number	Value	RY	Cooling Tower 1	Seq Order S Num T 1 Misc. Access.	Der Seq Lir	mand mit
Card Cool I	Equip 1 Code 6 Name 1 EDC80TON : 53CHILLED Full Load Value 44.7 71 Base Ey Utility DISTRI	Num OfCa Units Valu 1 815 WATER Full Load Units KW Y P BUTION LOS BUTION LOS	TONS TONS TONS TONS TONS CONDITION Full Load Value 44.7 Hourly Demand Value 38.8	CLING Value 5379 - Cooling ENSER Full Loa Units KW Base Hourly Demand Units TONS	ergy Units MBH Pumps andHT d Full I Value Utility Schedule Code FTSAMCLG		carrier HEAT cacity	Value	Cold Storage mand miting E	Cooling Tower 1	Seq Order S Num T 1 Misc. Access.	Der	mand mit

Tower	Tower	Capacity	Capacity	Consump	Consump	Fluid	Tower	Of	Airflow	Energy	Energy
Ref	Code	Value	Units	Value	Units	Type	Туре	Cells	Low Spd	Value	Units
1	EQ5100			37.2	KW	T-WATER	CTOWER	1	50	18.6	KW

DISTRIBUTION LOS 197.8

MBH FTSAMHTG HOT-LD

		-												
Card 59				- Equipme	nt Desc	ription /	/ TOD Sche	edules						
	Elec	Consump	Elec Dem	and Dema	nd					De	emand	Limit -		
Alternat	tive Time	of Day	Time of	Day Limi	t						Te	mperatu	re	
Number	Sche	dule	Schedule	. Max	KW Alt	ernative	Descripti	ion		Schedu	le	Drift		
3					ECC	O - WATE	ERSIDE SYS	STEMS						
Load Assignme	All C ent Loads	oil To ng Ref	-Group 1-	-Group 2	Gro	oup 30	Group 4-	-Group 5	Group d Begin E	6Grou	p 7-	-Group	8Gr	•
	-		1 13											
					Hea	ating Equ:	-		Sea					Deman
Heat	 Equip	Number	HW Pmp				Energy		Seq	Switch				
Heat Ref	Equip Code			Units	Cap'y		-		Seq Order	Switch over	Hot	Misc.	Cogen	Limit
Heat Ref Number	Equip Code	Number Of Units	HW Pmp Full Ld		Cap'y		Energy Rate		Seq Order	Switch	Hot	Misc.	Cogen	Demand Limit Numbe:
Heat Ref Number 1	Equip Code Name BOILHEFT	Number Of Units	HW Pmp Full Ld Value	Units	Cap'y Value	Units	Energy Rate Value	Units	Seq Order Number	Switch over	Hot	Misc.	Cogen	Limit
Heat Ref Number 1 2	Equip Code Name BOILHEFT	Number Of Units 1	HW Pmp Full Ld Value 11.2	Units KW	Cap'y Value 1830	Units MBH	Energy Rate Value 2000	Units MBH	Seq Order Number 1	Switch over	Hot	Misc.	Cogen	Limit
Heat Ref Number 1 2 3	Equip Code Name BOILHEFT BOILHEFT	Number Of Units 1 1	HW Pmp Full Ld Value 11.2 11.2	Units KW KW KW	Cap'y Value 1830 1830 1830	Units MBH MBH MBH	Energy Rate Value 2000 2000 2000	Units MBH MBH MBH	Seq Order Number 1 2 3	Switch over Control	Hot	Misc.	Cogen	Limit
Heat Ref Number 1 2 3 Card 71 Base	Equip Code Name BOILHEFT BOILHEFT	Number Of Units 1 1	HW Pmp Full Ld Value 11.2 11.2	Units KW KW KW	Cap'y Value 1830 1830 1830	Units MBH MBH MBH	Energy Rate Value 2000 2000 2000	Units MBH MBH MBH	Seq Order Number 1 2	Switch over Control	Hot Strg	Misc.	Cogen	Limit

Utility Description Reference Table

Schedules:

AVAIL AVAILABLE (100%)

BARRSCHD COOLING FAN SCHEDULE CODE FOR BARACKS

CRCHSCHD COOLING FAN SCHEDULE CODE FOR CHURCH

DAYSCHED COOLING FAN SCHEDULE CODE

DNGFANSC COOLING FAN SCHEDULE CODE FOR DINING

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHCHAPL F.S.H. CHAPEL LIGHTING SCHEDULE

FSHCHAPP F.S.H. CHAPEL PEOPLE SCHEDULE

FSHCLASL F.S.H. CLASSROOM LIGHTING SCHEDULE

FSHCLASP F.S.H CLASSROOM PEOPLE SCHEDULE

FSHDINL F.S.H. BARRACKS DINING LIGHTING SCHED

FSHDINP F.S.H. BARRACKS DINING PEOPLE SCHED

FSHLIB F.S.H. LIBRARY PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FSHTHEAL F.S.H. THEATRE LIGHTING SCHEDULE

FSHTHEAP F.S.H. THEATRE PEOPLE SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

OPSTART OPTIMUM START COOLING FAN SCHED. CODE

OPSTOP OPTIMUM STOP COOLING FAN SCHED. CODE

THESCHED COOLING FAN SCHEDULE CODE FOR THEATRE

System:

BPMZ BYPASS MULTIZONE SYSTEM

FC FAN COIL SYSTEM

SZ SINGLE ZONE SYSTEM

${\tt Equipment}:$

Cooling:

ACC1 TYPICAL AIR COOLED RECIP CHILLER

ACC2 TYPICAL AIR COOLED RECIP CHILLER

EQ1001L 2-STG CENTRIFUGAL CHILLER >550 TONS

EQ1008L 3-STG CENTRIFUGAL > 300 TONS

EQ1008S 3-STG CENTRIFUGAL < 300 TONS

EQ1009 3-STG CTV WITH VARIABLE FREQUENCY DRV

EQ1130L WTR-CLD CONDENSER COMPRESSOR > 30 TONS

EQ1172L AIR-CLD COND COMP >55 TONS

Heating:

BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE

BOILERWT WATERTUBE BOILER

STEAMBLR STEAM BOILER

Fan:

TYPFAN GENERIC FAN

Tower:

EQ5100 COOLING TOWER FANS

EQ5200 CONDENSER FANS

Misc:

EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME

EQ5013 WATER CIRCULATING PUMP - CONSTANT VOLUME

EQ5020 HEATING WATER CIRCULATION PUMP

Schedule Name: AVAIL
Project: AVAILABLE (100)

Location:

Client: VERSION 3.0

Program User: C.D.S. MARKETING
Comments: BUILDING TEMPLATE SERIES

Starting Month: JAN Ending Month: HTG

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

Schedule Name: BARRSCHD

Project: COOLING FAN SCHEDULE CODE FOR B

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100
24

Hour	Util Percent
0	100
8	0
17	100

Schedule Name: CRCHSCHD

Project: COOLING FAN SCHEDULE CODE FOR C

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent 0 0 7 100 16 0

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour	Util Percent
0	0
24	

Hour	Util Percent
<i>-</i>	
0	0
6	100
16	0

Schedule Name: DAYSCHED

Project: COOLING FAN SCHEDULE CODE

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent 0 0 6 100 17 0

24

Hour	Util Percent
0	0
12	100
16	0
24	

Schedule Name: DNGFANSC

Project: COOLING FAN SCHEDULE CODE FOR D

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SAT

Hour Util Percent 0 0 4 100 21 0

Hour	Util Percent
0	0
12	. 100
16	0
24	

Schedule Name: FSHBARRL

Project: F.S.H. BARRACKS LIGHT\MISC. SCH Location: F.S.H. - SAN ANTONIO TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: LIGHT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent
--- 5
17 80

5

22 24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 5
8 50
22 5
24

Schedule Name: FSHBARRP

Project: F.S.H. BARRACKS PEOPLE SCHEDULE

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: PEOPLE SCHEDULE FOR BARRACKS

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

100

8 0

17 80 22 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent ----

> 0 50

Schedule Name: FSHCHAPL

Project: F.S.H. CHAPEL LIGHTING SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

--- ------

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0

19 100

20 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

--- ------

0 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0

9 100

12 0

Schedule Name: FSHCHAPP

Project: FSH CHAPEL PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH Program User: HUITT-ZOLLARS, INC. Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent ----

0 100

Starting Month: JAN Ending Month: DEC Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

----0 0

15 19

0 20

24

Starting Month: JAN Ending Month: DEC

Hour Util Percent

24

Starting Month: JAN Ending Month: DEC Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0

0 12

Schedule Name: FSHCLASL

Project: F.S.H. CLASSROOM LIGHTING SCHE Location: EEAP BOILER CHILLER STUDY Client: CORP OF ENGINEERS, PUBLIC WAOEKS

Program User: HUITT-ZOLLARS, INC.
Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

--- ------

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0	0
8	100
10	0
13	100
1.4	•

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FSHCLASP

Project: F.S.H CLASSROOM PEOPLE SCHEDULE Location: EEAP BOILER CHILLER STUDY Client: CORP OF ENGINEERS, PUBLIC WORKS Program User: HUITT-ZOLLARS, INC. Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent
---- 0 0
8 100
10 0

13 50 14 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 0

Schedule Name: FSHDINL

Project: F.S.H. BARRACKS DINING LIGHTING

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.

Comments: LIGHTING SCHEDULE FOR DINING

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100
24

Hour	Util Percent
0	0
5	100
19	0
24	

Schedule Name: FSHDINP

Project: F.S.H. BARRACKS DINING PEOPLE S

Location: SAN ANTONIO TEXAS

Client: CORPS OF ENGRS, PUBLIC WORKS DIRE

Program User: HUITT ZOLLARS, INC.
Comments: PEOPLE SCHEDULE FOR DINING

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent --- ----0 100 24

Hour	Util Percent
0	0
6	100
9	0
11	100
14	0
17	100
19	0
24	

Schedule Name: FSHLIB

Project: F.S.H. LIBRARY PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent --- 0 100

Hour	Util Percent
0	15
7	100
17	60
23	15
24	

Schedule Name: FSHOFFIC

Project: F.S.H. OFFICE INTERNAL LOAD SCH Location: F.S.H. SAN ANTONIO, TEXAS Client: CORPS OF ENGRS, PUBLIC WORKS DIRE Program User: HUITT ZOLLARS, INC. - JTC, Comments: ALL INTERNAL LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
---0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent
---- 0 0
24

Schedule Name: FSHTHEAL

Project: F.S.H. THEATRE LIGHTING SCHEDUL

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH Program User: HUITT-ZOLLARS, INC. Comments: LIGHTING LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100

24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

8 100

10 0

24

Starting Month: JAN Ending Month: DEC

Hour Util Percent

----0 0

19 100 0

21 24

Starting Month: JAN Ending Month: DEC Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent ----

0 0

Schedule Name: FSHTHEAP

Project: F.S.H. THEATRE PEOPLE SCHEDULE

Location: EEAP BOILER

Client: CORP OF ENGINEERS, FSH
Program User: HUITT-ZOLLARS, INC.
Comments: PEOPLE LOAD SCHEDULE

Starting Month: JAN Ending Month: DEC

Hour Util Percent ---0 100 24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent 0 0 8 25 10 0 24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour	Util	Percent
0		0
19		75
21		0
24		

Starting Month: JAN Ending Month: DEC
Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

0 0

24

Schedule Name: FTSAMCLG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH,

Program User: HUITT-ZOLLARS, INC.

Comments: CHILLER SCHEDULE

Starting Month: JAN Ending Month: APR Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent ----0 0

Starting Month: MAY Ending Month: OCT Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent ----100 0 24

Starting Month: NOV Ending Month: DEC Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent ----0 0 24

Schedule Name: FTSAMHTG Project: EEAP BOILER

Location: FORT SAM HOUSTON, SAN ANTONIO, Client: CORP OF ENGINEERS - FORT WORTH,

Program User: HUITT-ZOLLARS, INC.

Comments: BOIELR SCHEDULE

Starting Month: JAN Ending Month: APR
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

24

Starting Month: MAY Ending Month: OCT
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0

24

Starting Month: NOV Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100

Schedule Name: OPSTART

Project: OPTIMUM START COOLING FAN SCHED

Location: Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional	Offset
Type	Op	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
--- 0 0
24

Starting Month: JAN Ending Month: DEC

Starting Day Type: WKDY $\ \$ Ending Day Type: SUN

Hour	Util Percent
0	0
6	100
7	0
24	

Schedule Name: OPSTOP

Project: OPTIMUM STOP COOLING FAN SCHED.

Location:

Client:

Program User: HUITT ZOLLARS, INC.

Comments: DETERMINE AMOUNT OF TIME TO CY

Reset utilization percent to : 0

whenever any of the following conditions are true.

Sensor				Optional (Offset
Type	Op	Value	Type/Units	Value	Units
RMDB	>	0	CSTAT	5	DEG-F
RMDB	<	0	HSTAT	-5	DEG-F
RMRH	>	0	DSRMRH	10	PERCENT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent
0 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: SUN

Hour Util Percent

0 0

16 100

17 0

24

Schedule Name: THESCHED

Project: COOLING FAN SCHEDULE CODE FOR T

Location:

Client:

Program User: HUITT ZOLLARS, INC.

Comments: FAN CODE IN MODELING OPTIMUM S

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: WKDY

Hour Util Percent

0 0

6 100

14 0

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SAT

Hour Util Percent

--- -------

0 (

14 100

24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SUN Ending Day Type: SUN

Hour Util Percent

- ------

0 0

Utility Description Reference Table

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Schedules:

AVAIL AVAILABLE (100%)

FSHBARRL F.S.H. BARRACKS LIGHT\MISC. SCHEDULE

FSHBARRP F.S.H. BARRACKS PEOPLE SCHEDULE

FSHCHAPL F.S.H. CHAPEL LIGHTING SCHEDULE

FSHCHAPP F.S.H. CHAPEL PEOPLE SCHEDULE

FSHCLASL F.S.H. CLASSROOM LIGHTING SCHEDULE

FSHCLASP F.S.H CLASSROOM PEOPLE SCHEDULE

FSHDINL F.S.H. BARRACKS DINING LIGHTING SCHED

FSHDINP F.S.H. BARRACKS DINING PEOPLE SCHED

FSHLIB F.S.H. LIBRARY PEOPLE SCHEDULE

FSHOFFIC F.S.H. OFFICE INTERNAL LOAD SCHEDULE

FSHTHEAL F.S.H. THEATRE LIGHTING SCHEDULE

FSHTHEAP F.S.H. THEATRE PEOPLE SCHEDULE

FTSAMCLG EEAP BOILER/CHILLER STUDY

FTSAMHTG EEAP BOILER/CHILLER STUDY

System:

BPMZ BYPASS MULTIZONE SYSTEM

FC FAN COIL SYSTEM

SZ SINGLE ZONE SYSTEM

Equipment:

Cooling:

EDC80TON ENGINE DRIVEN CHILLER, 80 TONS

YSCRW22 YORK W.C. SCREW CHILLER

Heating:

BOILHEFT HIGH EFFICIENCY MODULAR FIRETUBE BOIL.

Tower:

EQ5100 COOLING TOWER FANS

03-0185.06 EEAP BOILER-CHILLER STUDY FORT SAM HOUSTON, TEXAS CORPS OF ENGINEERS - FORT WORTH, TEXAS HUITT-ZOLLARS, INC. AREA 2200

Weather File Code:

 Location:
 SAN ANTONIO, TEXAS

 Latitude:
 29.0 (deg)

 Longitude:
 98.0 (deg)

 Time Zone:
 6

 Elevation:
 792 (ft)

 Barometric Pressure:
 29.0 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 97 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 30 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0738 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,761.9 (Btu-min./hr/cuft)
Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

Design Simulation Period: June To November
System Simulation Period: January To December
Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 10:29:16 2/27/96 Dataset Name: FSH2200 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1
AREA 2200 EXISTING AIRSIDE SYSTEMS

System Totals

Percent	Cool	ing Loa	d	Heatin	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	49.6	57	4,806	-306,983	36	1,143	21,697.2	0	0	0.0	0	0
5 - 10	99.2	4	319	-613,967	31	984	43,394.4	0	0	0.0	0	0
10 - 15	148.8	5	427	-920,950	14	463	65,091.6	0	0	0.0	0	0
15 - 20	198.4	3	257	-1,227,933	8	262	86,788.8	0	0	0.0	0	0
20 - 25	248.0	3	279	-1,534,917	1	41	108,486.0	0	0	0.0	0	0
25 - 30	297.6	3	224	-1,841,900	2	79	130,183.2	0	0	0.0	0	0
30 - 35	347.1	4	365	-2,148,884	1	33	151,880.4	0	0	0.0	0	0
35 - 40	396.7	4	357	-2,455,867	1	23	173,577.7	0	0	0.0	0	0
40 - 45	446.3	4	362	-2,762,850	0	12	195,274.8	0	0	0.0	0	0
45 - 50	495.9	4	317	-3,069,834	1	31	216,972.1	0	0	0.0	0	0
50 - 55	545.5	4	317	-3,376,817	1	41	238,669.3	0	0	0.0	0	0
55 - 60	595.1	3	233	-3,683,801	3	90	260,366.5	0	0	0.0	0	0
60 - 65	644.7	1	43	-3,990,785	0	10	282,063.8	0	0	0.0	0	0
65 - 70	694.3	1	66	-4,297,768	0	0	303,760.9	0	0	0.0	0	0
70 - 75	743.9	0	0	-4,604,751	0	0	325,458.1	0	0	0.0	0	0
75 - 80	793.5	0	0	-4,911,734	0	0	347,155.3	0	0	0.0	0	0
80 - 85	843.1	0	0	-5,218,718	0	0	368,852.5	0	0	0.0	0	0
85 - 90	892.7	0	0	-5,525,702	0	0	390,549.7	0	. 0	0.0	0	0
90 - 95	942.2	0	0	-5,832,684	. 0	0	412,247.0	0	0	0.0	0	0
95 - 100	991.8	0	0	-6,139,668	0	0	433,944.2	100	8,760	0.0	0	0
Hours Off	0.0	0	388	0	0	5,548	0.0	0	0	0.0	0	8,760

				E	QUIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption	1					
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	102756	92885	108274	98504	105515	104064	99955	108274	98504	105515	98587	99955	1,222,789
	PK	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	Y									
	CHILLD	0	0	0	0	23659	22896	23659	23659	22896	23659	0	0	140,429
	PK	0.0	0.0	0.0	0.0	31.8	31.8	31.8	31.8	31.8	31.8	0.0	0.0	31.8
2			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	1265	1224	1265	1265	1224	1265	0	0	7,507
	PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	1.7
3				SE UTILIT	Y									
	CHILLD	0	0	0	0	223	216	223	223	216	223	0	0	1,325
	PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.3
4			BAS	E UTILIT	Y									
	CHILLD	0	0	0	0	298	288	298	298	288	298	0	0	1,766
	PK	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4

				E Q	UIPI	MENT	ENE	RGY	CONS	UMPT	0 N			
Ref	Equip -					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5			BASE	UTILITY										
-	CHILLD	0	0	0	0	1265	1224	1265	1265	1224	1265	0	0	7,507
	PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	1.7
6			BASE	UTILITY										
	CHILLD	0	0	0	0	1042	1008	1042	1042	1008	1042	0	0	6,182
	PK	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	0.0	0.0	1.4
7			BASE	UTILITY										
	CHILLD	0	0	0	0	1116	1080	1116	1116	1080	1116	0	0	6,624
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
8	HOTLD	972	BASE 878	UTILITY 972	941	0	0	0	0	0	0		272	
	PK	1.3	1.3	1.3	1.3							941	972	5,678
	PK	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3
9			BASE	UTILITY										
	HOTLD	135	122	135	130	0	0	0	0	0	0	130	135	786
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
10			BASE	UTILITY										
	HOTLD	45	41	45	44	0	0	. 0	0	0	0	44	45	265
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
11			DACE	UTILITY										
11	HOTLD	69	62	69	67	0	0	0	0	0	0	67	69	404
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	67 0.1	0.1	404
								• • • •					V.2	0
12			BASE	UTILITY										
	HOTLD	206	186	206	199	0	0	0	0	0	0	199	206	1,203
	PK	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3
13			BASE	UTILITY										
	HOTLD	44	40	44	42	0	0	0	0	0	0	42	44	256
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
,	EQ1001L		2 0	TG CENTR		C''' I I I I I I I I I I I I I I I I I I	. EEO BON	•						
_	ELEC	0	0	O CENTR	O 0		161610		198550	153830	70218	0	0	908,553
	PK	0.0	0.0	0.0	0.0	538.1	573.9	594.1	600.1	581.7	410.6	0.0	0.0	600.1
1	EQ5100			ING TOWE										
	ELEC	0	0	0	0	22171	21456	22171	22171	21456	10942	0	0	120,368
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8

				E (UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		COOI	LING TOWE	ER FANS									
	WATER	0	0	0	0	592	734	879	905	686	292	0	0	4,088
	PK	0.0	0.0	0.0	0.0	2.6	2.6	2.6	2.6	2.6	2.1	0.0	0.0	2.6
1	EQ5001		CHII	LLED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	55502	53712	55502	55502	53712	55502	0	0	329,433
	PK	0.0	0.0	0.0	0.0	74.6	74.6	74.6	74.6	74.6	74.6	0.0	0.0	74.6
1	EQ5010		CONE	DENSER WA	TER PUM	P-CV (HIG	H EFFIC.)						
	ELEC	0	0	0	0	27751	26856	27751	27751	26856	27751	0	0	164,717
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
1	EQ5300		CONT	TROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	ACC2		TYPI	CAL AIR	COOLED	RECIP CH	ILLER							
	ELEC	0	0	363	2777	14095	20980	29371	29797	17655	3088	187	0	118,315
	PK	28.3	28.3	36.8	54.5	75.0	78.8	81.6	81.0	75.7	49.6	36.3	28.3	81.6
2	EQ5001		CHII	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	253	605	1637	1584	1637	1637	1584	1637	132	0	10,705
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
2	EQ5300		CONT	TROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	115	275	744	720	744	744	720	744	60	0	4,866
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	EQ1172L		AIR-	-CLD CONI	COMP >	55 TONS								
	ELEC	2730	2187	4913	6794	9935	11277	13167	13023	10529	6695	4766	2772	88,789
	PK	13.9	13.4	17.0	19.7	24.2	26.9	29.2	29.0	25.8	20.0	16.7	13.6	29.2
3	EQ5200	•	CONE	DENSER FA	ans									
	ELEC	135	103	311	515	781	899	1144	1042	851	483	301	140	6,705
	PK	0.7	0.6	1.3	1.6	1.9	2.1	2.9	2.9	2.0	1.7	1.3	0.7	2.9
3	EQ5313		CONT	TROLS										
	ELEC	167	151	223	216	223	216	223	223	216	223	216	186	2,485
	PK	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
4	EQ1130L		WTR-	-CLD CONI	ENSER C	OMPRESSO	R > 30 T	ons						
	ELEC	994	679	2328	4656	9165	11128	13153	13574	10159	4399	1910	774	72,917
	PK	19.8	19.3	25.5	30.2	34.2	34.7	35.5	35.8	35.0	29.1	25.5	20.3	35.8

				E Q	UIP	MENT	ENE	RGY	CONS	UMPTI	о и			
	r					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
4	EQ5200		COND	ENSER FA	NS									
	ELEC	36	23	94	185	359	437	547	533	397	174	77	28	2,891
	PK	0.9	0.8	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.4	1.2	0.9	1.5
4	EQ5011		COMP	ENCED MA	TIDD DINA			~ \						
4	ELEC	158	114	ENSER WA	1ER PUM 525	P-CV (MED 1116	108 EFF1							
	PK	1.5	1.5	1.5	1.5	1.5	1.5	1116 1.5	1116 1.5	1080	1116	234	120	8,079
	•••	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
4	EQ5302		CONT	ROLS										
	ELEC	10	8	20	35	74	72	74	74	72	74	16	8	539
	ÞK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5	ACC2		TYPI	CAL AIR	COOLED :	RECIP CH	ILLER							
	ELEC	0	0	0	0	18491	22575	26839	27081	19690	8207	0	0	122,882
	PK	0.0	0.0	0.0	0.0	60.6	67.0	72.2	71.5	62.5	47.4	0.0	0.0	72.2
														,2.2
5	EQ5001			LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	2232	2160	2232	2232	2160	2232	0	0	13,248
	PK	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0
5	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
5	EQ5001		CHIL	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	1116	1080	1116	1116	1080	1116	0	0	6,624
	PK	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
6	EQ1130L		WTR	CLD COND	ENSER C	OMDDESSO.	יי או	ONG						
•	ELEC	0	0	0	0	14646	22640	32403	34136	19298	2100	0	0	125 222
	PK	0.0	0.0	0.0	0.0	80.7	82.6	83.7	84.5	82.6	45.0	0.0	0.0	125,222 84.5
_	T05000													
ь	EQ5200 ELEC	0		ENSER FA										
	PK	0.0	0.0	0.0	0.0	328 2.2	544 2.2	854 2.2	847	449	41	0	0	3,063
	• • •	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	1.1	0.0	0.0	2.2
6	EQ5011		COND	ENSER WA	TER PUM	P-CV (MED	IUM EFFI	c.)						
	ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
6	EQ5302		CONT	ROLS										
	ELEC	0	0	0	0	74	72	74	74	72	74	0	0	442
	PK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
													-	

----- EQUIPMENT ENERGY CONSUMPTION ------Ref Equip ------ Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Total 7 ACC1 TYPICAL AIR COOLED RECIP CHILLER 0 0 0 10761 13209 15730 15814 11463 ELEC 0 6219 0 0 73.197 PK 0.0 0.0 0.0 35.6 38.9 42.0 41.9 37.9 31.0 0.0 0.0 42.0 7 EQ5001 CHILLED WATER PUMP - CONSTANT VOLUME 0 ELEC 0 0 0 2753 2664 2753 2753 2664 2753 0 0 16,339 0.0 PK 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 7 EO5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 0 744 720 744 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 1.0 1 TYPFAN GENERIC FAN ELEC 22171 20026 22171 21456 22171 21456 22171 22171 21456 22171 21456 22171 261,048 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 2 TYPFAN GENERIC FAN ELEC 46910 42370 46910 45396 46910 45396 46910 46910 45396 46910 45396 46910 552.324 PK 63.1 63.1 63.1 63.1 63.1 63.1 63.1 63.1 63.1 63.1 63.1 63.1 63.1 3 TYPFAN GENERIC FAN ELEC 58539 52874 58539 56651 58539 58539 56651 58539 56651 56651 58539 58539 689,253 PK 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 4 TYPFAN GENERIC FAN ELEC 58539 52874 58539 56651 58539 56651 58539 58539 56651 58539 56651 58539 689,253 PK 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 78.7 5 TYPFAN GENERIC FAN ELEC 2613 2360 2613 2528 2613 2528 2613 2613 2528 2613 2613 30,762 PK 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 6 TYPFAN GENERIC FAN 11151 10072 11151 10791 11151 ELEC 10791 11151 11151 10791 11151 10791 11151 131.292 PK 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 7 TYPFAN GENERIC FAN ELEC 1478 1637 1637 1637 1584 1584 1637 1637 1584 1637 1584 1637 19.272 PK 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 8 TYPFAN GENERIC FAN ELEC 9262 8366 9262 8963 9262 8963 9262 9262 8963 9262 8963 9262 109,051 PK 12.4 12.4 12.4 12.4 12.4 12.4 12.4 12.4 12.4 12.4 12.4 12.4 12.4

D-5	Paris -													
	Equip Code	Jan	Feb	Mar	Apr	Mon May	thly Cons June	sumption July	Aug	Sep	Oct	Nov	Dec	Total
							0 44.0	0017	9	оср	300		5 00	TOCA.
9	TYPFAN		GENI	ERIC FAN										
	ELEC	3869	3494	3869	3744	3869	3744	3869	3869	3744	3869	3744	3869	45,552
	PK	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
10	TYPFAN		GEN	ERIC FAN										
	ELEC	3869	3494	3869	3744	3869	3744	3869	3869	3744	3869	3744	3869	45,552
	PK	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
11	TYPFAN		GENI	ERIC FAN										
	ELEC	11086	10013	11086	10728	11086	10728	11086	11086	10728	11086	10728	11086	130,524
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
12	TYPFAN		GEN	ERIC FAN										
	ELEC	8818	7964	8818	8533	8818	8533	8818	8818	8533	8818	8533	8818	103,821
	PK	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
13	TYPFAN		GEN	ERIC FAN										
	ELEC	446	403	446	432	446	432	446	446	432	446	432	446	5,256
	PK	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
1	BLR2MOD		WAT	ERTUBE B	OILER WI	TH HIGH-	LOW FIRE							
	GAS	4121	4258	1302	1260	0	0	0	0	0	0	1260	3481	15,682
	PK	30.0	30.0	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1.8	30.0	30.0
1	EQ5020		HEA	TING WAT	ER CIRCU	LATION P	UMP							
	ELEC	8333	7526	8333	8064	0	0	0	0	0	0	8064	8333	48,653
	PK	11.2	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2	11.2
1	EQ5311		BOI	LER CONT	ROLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	54:
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
1	EQ5013	. •	WAT	ER CIRCU	LATING P	UMP - CO	NSTANT V	OLUME						
	ELEC	417	376	417	403	0	0	0	0	0	0	403	417	2,43
	PK	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0
2	BLR2MOD		WAT	ERTUBE B	OILER WI	TH HIGH-	LOW FIRE							
	GAS	113	124	0	0	0	0	0	0	0	0	0	46	28:
	PK	4.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.
2	EQ5020		HEA	TING WAT	ER CIRCU	LATION F	UMP							
	ELEC	470	414	0	0	0	0	0	0	0	0	0	269	1,15
	PK	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.3

PK

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 1
AREA 2200 EXISTING WATERSIDE SYSTEMS

----- EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec Total 2 EQ5311 BOILER CONTROLS ELEC 5 5 0 0 0 0 0 0 0 0 0 3 13 PΚ 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 2 EQ5013 WATER CIRCULATING PUMP - CONSTANT VOLUME ELEC 29 0 0 0 0 0 0 0 0 0 18 70 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.6 0.6 3 BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 E05020 HEATING WATER CIRCULATION PUMP ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 EQ5311 BOILER CONTROLS ELEC 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 EQ5013 WATER CIRCULATING PUMP - CONSTANT VOLUME ELEC 0 6 2 0 0 0 0 0 0 0 0 5 12 PK 0.6 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.6 0.6 WATERTUBE BOILER 1942 1907 683 0 213 0 0 0 0 0 652 1868 7.266 PK 4.5 4.7 2.8 1.1 0.0 0.0 0.0 0.0 0.0 0.0 2.6 4.5 4.7 4 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 1116 1008 1116 1080 0 0 0 0 0 0 1080 1116 6,516 PΚ 1.5 1.5 1.5 1.5 0.0 0.0 0.0 0.0 0.0 0.0 1.5 1.5 1.5 4 E05311 BOILER CONTROLS ELEC 84 93 93 90 0 0 0 0 0 0 90 93 543 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 WATERTUBE BOILER GAS 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 0 0 0 0 0 0 0 0 0 0 0 0 0

0.0

0.0

0.0

0.0

Ref	Equip					Mont	hly Cons	umption -						
Jum	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
5	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
6			STEA	M BOILER										
	GAS	426	391	127	108	0	0	0	0	0	0	133	390	1,57
	PK	1.8	1.9	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.8	1.
6	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	54
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
7			WATE	RTUBE BO	ILER									
	GAS .	392	364	97	89	0	0	0	0	0	0	115	380	1,43
	PK	2.4	2.5	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.4	2.
7	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PO	JMP							
	ELEC	94	88	75	72	0	0	0	0	0	0	76	97	50
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.
7	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	59	55	47	45	0	0	0	0	0	0	47	61	31
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.
7	EQ5020		HEAT	'ING WATE	R CIRCUL	ATION P	JMP							
	ELEC	223	202	223	216	0	0	0	0	0	0	216	223	1,30
	PK	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.
8			WATE	RTUBE BO	ILER									
	GAS	3603	3489	1494	505	0	0	0	0	0	0	1420	3445	13,99
	PK	7.5	7.5	4.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	4.6	7.5	7.
8	EQ5020		HEAT	ING WATE	R CIRCUL	ATION P	UMP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,55
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.
8	EQ5311		BOII	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	54
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.

				E Q	UIPM	ENT	ENER	GY C	оиѕи	MPTI	O N			
Ref	Equip					Mont	hlv Cons	umption						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
9			WATE	RTUBE BO	ILER									
	GAS	0	19	0	0	0	0	0	0	0	0	0	5	25
	PK	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4
9	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MР							
	ELEC	0	123	0	0	0	0	0	0	0	0	0	68	191
	PK	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2
9	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	0	7	0	0	0	0	0	0	0	0	0	4	11
	PK	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
10			WATE	RTUBE BO	ILER									
	GAS	309	290	82	58	0	0	0	0	0	0	94	282	1,115
	PK	1.6	1.6	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.6	1.6
10	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	IMP							
	ELEC	1706	1695	1436	1332	0	0	0	0	0	0	1462	1750	9,380
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.7
10	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	58	57	48	45	0	0	0	0	0	0	49	59	317
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

*********** ********* TRACE 600 ANALYSIS by HUITT & ZOLLARS ********************

03-0185.06 EEAP BOILER-CHILLER STUDY FORT SAM HOUSTON, TEXAS CORPS OF ENGINEERS - FORT WORTH, TEXAS HUITT-ZOLLARS, INC. AREA 2200

Weather File Code:

Location: SAN ANTONIO, TEXAS 29.0 (deg) Latitude: Longitude: 98.0 (deg) Time Zone: 6 Elevation: 792 (ft) Barometric Pressure: 29.0 (in. Hg)

Summer Clearness Number: 0.90 Winter Clearness Number: 0.90 Summer Design Dry Bulb: 97 (F) 76 (F) Summer Design Wet Bulb: 30 (F) Winter Design Dry Bulb: Summer Ground Relectance: 0.20

Winter Ground Relectance:

Air Density: 0.0738 (Lbm/cuft) Air Specific Heat: 0.2444 (Btu/lbm/F)

Density-Specific Heat Prod: 1.0818 (Btu-min./hr/cuft/F) 4,761.9 (Btu-min./hr/cuft) Latent Heat Factor: Enthalpy Factor: 4.4255 (Lb-min./hr/cuft)

0.20

To November Design Simulation Period: June System Simulation Period: January To December Cooling Load Methodology: TETD/Time Averaging

Time/Date Program was Run: 15:25:22 2/27/96 Dataset Name:

FSH2200 .TM

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 2 ECO M - AIRSIDE SYSTEMS

System Totals

Percent	Cool	ling Loa	d	Heati	ng Load		Cooling	Airflow		Heating	Airflow	
Design	Cap.	Hours	Hours	Capacity	Hours	Hours	Cap.	Hours	Hours	Cap.	Hours	Hours
Load	(Ton)	(%)		(Btuh)	(%)		(Cfm)	(%)		(Cfm)	(%)	
0 - 5	49.6	54	4,561	-351,412	33	866	21,669.2	4	317	0.0	0	0
5 - 10	99.1	4	335	-702,824	23	587	43,338.4	3	248	0.0	0	0
10 - 15	148.7	3	214	-1,054,235	16	419	65,007.6	0	0	0.0	0	0
15 - 20	198.3	2	160	-1,405,647	6	166	86,676.8	0	0	0.0	0	0
20 - 25	247.9	3	284	-1,757,059	8	201	108,346.0	0	0	0.0	0	0
25 - 30	297.4	5	432	-2,108,471	9	229	130,015.2	0	0	0.0	0	0
30 - 35	347.0	4	342	-2,459,883	2	51	151,684.4	32	2,774	0.0	0	0
35 - 40	396.6	6	485	-2,811,294	2	45	173,353.6	25	2,197	0.0	0	0
40 - 45	446.1	7	581	-3,162,707	0	0	195,022.7	0	0	0.0	0	0
45 - 50	495.7	4	355	-3,514,118	0	3	216,692.0	1	105	0.0	0	0
50 - 55	545.3	2	166	-3,865,530	0	0	238,361.1	1	71	0.0	0	0
55 - 60	594.9	4	297	-4,216,943	0	0	260,030.3	1	76	0.0	0	0
60 - 65	644.4	1	81	-4,568,354	0	0	281,699.6	11	956	0.0	0	0
65 - 70	694.0	1	43	-4,919,767	0	0	303,368.7	17	1,512	0.0	0	0
70 - 75	743.6	1	52	-5,271,178	0	7	325,038.0	0	0	0.0	0	0
75 - 80	793.1	0	15	-5,622,590	0	10	346,707.2	0	0	0.0	0	0
80 - 85	842.7	0	19	-5,974,002	0	3	368,376.3	1	75	0.0	0	0
85 - 90	892.3	0	0	-6,325,414	0	0	390,045.5	0	4	0.0	0	0
90 - 95	941.8	0	0	-6,676,825	0	0	411,714.8	1	71	0.0	0	0
95 - 100	991.4	0	0	-7,028,237	0	0	433,383.9	4	354	0.0	0	0
Hours Off	. 0.0	0	338	0	0	6,173	0.0	0	0	0.0	0	8,760

Equip					Mon	thly Con	sumption						
Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
LIGHTS													
ELEC	102756	92885	108274	98504	105515	104064	99955	108274	98504	105515	98587	99955	1,222,7
PK	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587
MISC LD													
ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(
MISC LD													
GAS	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	!
MISC LD													
OIL	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MISC LD													
P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MISC LD													
P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MISC LD													
P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
			E UTILIT										
CHILLD	0	0	0	0	23659	22896	23659	23659	22896	23659	0	0	140,
PK	0.0	0.0	0.0	0.0	31.8	31.8	31.8	31.8	31.8	31.8	0.0	0.0	3
			E UTILIT										
CHILLD	0	0	0	0	1265	1224	1265	1265	1224	1265	0	0	7,
PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	
			E UTILIT										
CHILLD	0	0	0	0	223	216	223	223	216	223	0	0	1,
PK	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	
		BAS	E UTILIT	Y									
CHILLD	0	0	0	0	298	288	298	298	288	298	0	0	1,
		0.0	0.0	0.0	0.4	0.4				0.4		-	-,

				E Q	UIP	MENT	ENE	RGY	соиѕ	UMPT	I O N			
Ref	Equip -					Mon	thly Con	sumption	1					
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
5			BASE	UTILITY										
	CHILLD	0	0	0	0	1265	1224	1265	1265	1224	1265	0	0	7,507
	PK	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	1.7
6			BASE	UTILITY										
	CHILLD	0	0	0	0	1042	1008	1042	1042	1008	1042	0	0	6,182
	PK	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	0.0	0.0	1.4
7			BASE	UTILITY										
	CHILLD	0	0	0	0	1116	1080	1116	1116	1080	1116	0	0	6,624
	ÞК	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5
8			BASE	UTILITY										
	HOTLD	972	878	972	941	0	0	0	0	0	0	941	972	5,678
	PK	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3
9			BASE	UTILITY										
	HOTLD	135	122	135	130	0	0	0	0	0	0	130	135	786
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
. 10			BASE	UTILITY										÷
	HOTLD	45	41	45	44	0	0	0	0	0	0	44	45	265
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
11			BASE	UTILITY										
	HOTLD	69	62	69	67	0	0	0	0	0	0	67	69	404
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
12			BASE	UTILITY										
	HOTLD	206	186	206	199	0	0	0	0	0	0	199	206	1,203
	PK	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3
13		•	BASE	UTILITY										
	HOTLD	44	40	44	42	0	0	0	0	Ö	0	42	44	256
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
1	EQ1001L		2-S	TG CENTR										
	ELEC	0	0	0							69200		0	1,089,786
	PK	0.0	0.0	0.0	0.0	572.0	579.7	594.1	600.1	586.1	418.5	0.0	0.0	600.1
1	EQ5100		COOL	ING TOWER	R FANS									
	ELEC	0	0	0	0	22171				21456	11391	0	0	120,817
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8

				E C	UIP	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		COOL	ING TOWE	R FANS									
	WATER	0	0	0	0	816	932	1064	1120	889	275	0	0	5,096
	PK	0.0	0.0	0.0	0.0	2.6	2.6	2.6	2.6	2.6	2.1	0.0	0.0	2.6
1	EQ5001		CHII	LED WATE	R PUMP	- CONST.	ANT VOLU	ME						
	ELEC	0	0	0	0	55502	53712	55502	55502	53712	55502	0	0	329,433
	PK	0.0	0.0	0.0	0.0	74.6	74.6	74.6	74.6	74.6	74.6	0.0	0.0	74.6
1	EQ5010		CONE	ENSER WA	TER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	0	0	0	0	27751	26856	27751	27751	26856	27751	0	0	164,717
	PK	0.0	0.0	0.0	0.0	37.3	37.3	37.3	37.3	37.3	37.3	0.0	0.0	37.3
1	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
2	ACC2		TYPI	CAL AIR	COOLED	RECIP CH	ILLER							
	ELEC	0	0	312	3960	11525	13456	16126	17208	12636	2979	193	0	78,396
	PK	26.2	26.2	34.7	55.3	75.4	78.8	81.6	81.0	75.7	51.6	37.6	26.2	81.6
2	EQ5001		CHII	LED WATE	R PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	202	548	1637	1584	1637	1637	1584	1637	132	0	10,597
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
2	EQ5300		CONT	ROL PANE	L & INT	ERLOCKS								
	ELEC	0	0	92	249	744	720	744	744	720	744	60	0	4,817
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	EQ1172L		AIR-	CLD CONI	COMP >	55 TONS								
	ELEC	2730	2187	4913	6794	9935	11277	13167	13023	10529	6695	4766	2772	88,789
	PK	13.9	13.4	17.0	19.7	24.2	26.9	29.2	29.0	25.8	20.0	16.7	13.6	29.2
3	EQ5200	÷	CONI	ENSER FA	NS									
	ELEC	135	103	311	515	781	899	1144	1042	851	483	301	140	6,705
	PK	0.7	0.6	1.3	1.6	1.9	2.1	2.9	2.9	2.0	1.7	1.3	0.7	2.9
3	EQ5313		COM	ROLS										
	ELEC	167	151	223	216	223	216	223	223	216	223	216	186	2,485
	PK	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
4	EQ1130L		WTR-	-CLD CONI	ENSER C	OMPRESSO	R > 30 T	ONS						
	ELEC	1158	851	3168	4527	7190	8383	9524	10367	7646	4449	2747	1070	61,080
	PK	19.8	22.4	27.5	31.9	34.2	34.7	35.5	35.8	35.0	31.5	29.5	24.0	35.8

Ref Regulp					E Q	UIPM	ENT	ENE	RGY	CONS	UMPTI	O N			
Num	Ref	Equip					Mon	thly Con	sumption						
ELEC	Num		Jan						_				Nov	Dec	Total
PK	4	EQ5200		CONDI	ENSER FA	NS									
## SQS-011 CONDENSER WATER FUMP-CVIMEDIUM EFFIC.) ELEC		ELEC	39	26	120	196	314	367	465	446	331	178	105	34	2,622
ELBC		PK	0.9	0.8	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.9	1.5
PK	4	EQ5011		COND	ENSER WA	TER PUME	-CV (MED	IUM EFFI	C.)						
PK		ELEC	191	153	309	335	1116	1080	1116	1116	1080	1116	264	162	8.037
ELEC 13 10 21 22 74 72 74 74 72 74 18 11 536 FK 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1		ÞΚ	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5				
FK 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	4	EQ5302		CONT	ROLS										
FK 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1		ELEC	13	10	21	22	74	72	74	74	72	74	18	11	536
ELEC 0 0 0 0 0 13436 14833 17082 18542 13107 7784 0 0 0 84,785 PK 0.0 0.0 0.0 0.0 66.5 69.5 72.1 71.5 66.8 58.1 0.0 0.0 0.0 72.1 5 EQ5001		PK	0.1												
ELEC 0 0 0 0 0 13436 14833 17082 18542 13107 7784 0 0 0 84,785 PK 0.0 0.0 0.0 0.0 66.5 69.5 72.1 71.5 66.8 58.1 0.0 0.0 0.0 72.1 5 EQ5001	5	ACC2		TYPI	CAT. ATR	COOLED E	ECIP CH	TT.T.PP							
PK 0.0 0.0 0.0 0.0 66.5 69.5 72.1 71.5 66.8 58.1 0.0 0.0 72.1 5 EQSOO1	_		0						17082	18542	13107	7701	٥	0	04 705
ELEC 0 0 0 0 0 2232 2160 2232 2160 2232 0 0 0 13,248 PK 0.0 0.0 0.0 0.0 0.0 3.0 3.0 3.0 3.0 3.0															
ELEC 0 0 0 0 0 2232 2160 2232 2160 2232 0 0 0 13,248 PK 0.0 0.0 0.0 0.0 0.0 3.0 3.0 3.0 3.0 3.0	-	E05001		QUITE:	TED MANUE	D DVIVD	aouam								
PK 0.0 0.0 0.0 0.0 3.0 3.0 3.0 3.0 3.0 0.0 0.0 0.0 3.0 5 EQ5300 CONTROL PANEL & INTERLOCKS ELEC 0 0 0 744 720 744 720 744 0 0 4,416 PK 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0 0.0 1.0 5 EOS001 CHILLED WATER PUMP - CONSTANT VOLUME ELEC 0 0 0 0 1.16 1080 1116 0 0 0 6,624 PK 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 0.0 0.0 0 6,624 PK 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 0.0 0.0 0 61,043 ELEC 0 0	5		•												
ELEC															
ELEC	r	FOETOO		CONTE	DOI DANIE	7 C TARRE	ant corra								
PK 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	,		0					720	744	=			_	_	
ELEC 0 0 0 0 1116 1080 1116 1080 1116 0 0 0 6,624 PK 0.0 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5															
ELEC 0 0 0 0 1116 1080 1116 1080 1116 0 0 0 6,624 PK 0.0 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	_	505005													
PK 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 0.0 0.0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	5														
6 EQ1130L WTR-CLD CONDENSER COMPRESSOR > 30 TONS ELEC			_												
ELEC 0 0 0 0 7671 11047 14149 15529 10541 2105 0 0 61,043 PK 0.0 0.0 0.0 80.7 82.6 83.7 84.5 82.6 42.4 0.0 0.0 84.5 6 EQ5200				• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •		2.5		1.5	1.5	1.3	0.0	0.0	1.5
PK 0.0 0.0 0.0 0.0 80.7 82.6 83.7 84.5 82.6 42.4 0.0 0.0 84.5 6 EQ5200	6	EQ1130L		WTR-	CLD COND	ENSER CO	MPRESSO	R > 30 T	ONS						
6 EQ5200 CONDENSER FANS ELEC 0 0 0 0 178 268 532 392 255 41 0 0 0 1,667 PK 0.0 0.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 1.0 0.0 0.0 0.0 2.2 6 EQ5011 CONDENSER WATER PUMP-CV (MEDIUM EFFIC.) ELEC 0 0 0 0 0 2753 2664 2753 2753 2664 2753 0 0 16,339 PK 0.0 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 6 EQ5302 CONTROLS ELEC 0 0 0 0 0 74 72 74 74 72 74 0 0 0 442		ELEC	0	0	0	0	7671	11047	14149	15529	10541	2105	0	0	61,043
ELEC 0 0 0 0 178 268 532 392 255 41 0 0 1,667 PK 0.0 0.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 1.0 0.0 0.0 2.2 6 EQ5011		PK	0.0	0.0	0.0	0.0	80.7	82.6	83.7	84.5	82.6	42.4	0.0	0.0	84.5
PK 0.0 0.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 1.0 0.0 0.0 2.2 2.2 2.2 2.2 2.2 1.0 0.0 0.0 0.0 2.2 2.2 6 EQ5011 CONDENSER WATER PUMP-CV(MEDIUM EFFIC.) ELEC 0 0 0 0 0 2753 2664 2753 2753 2664 2753 0 0 16,339 PK 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 3.7 6 EQ5302 CONTROLS ELEC 0 0 0 0 74 72 74 74 72 74 0 0 0 442	6	EQ5200	4	COND	ENSER FA	NS									
6 EQ5011 CONDENSER WATER PUMP-CV(MEDIUM EFFIC.) ELEC 0 0 0 0 0 2753 2664 2753 2753 2664 2753 0 0 16,339 PK 0.0 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 6 EQ5302 CONTROLS ELEC 0 0 0 0 74 72 74 74 72 74 0 0 0 442		ELEC	0	0	0	0	178	268	532	392	255	41	0	0	1,667
ELEC 0 0 0 0 2753 2664 2753 2664 2753 0 0 16,339 PK 0.0 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 6 EQ5302 CONTROLS ELEC 0 0 0 0 0 74 72 74 74 72 74 0 0 0 442		PK	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	1.0	0.0	0.0	2.2
PK 0.0 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 6 EQ5302	6	EQ5011		COND	ENSER WA	TER PUMI	P-CV (MED	IUM EFFI	C.)						
PK 0.0 0.0 0.0 0.0 3.7 3.7 3.7 3.7 3.7 0.0 0.0 3.7 6 EQ5302		ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
ELEC 0 0 0 0 74 72 74 74 72 74 0 0 442		PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7						
ELEC 0 0 0 0 74 72 74 74 72 74 0 0 442	6	EQ5302		CONT	ROLS										
			0			0	74	72	74	74	72	74	0	O	442
		PK	0.0	0.0	0.0										

				Е С	UIPI	4 E N T	ENEI	RGY (CONS	JMPT	I O N			
Ref	Equip					Mon	thly Cons	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
7	ACC1		TYP	ICAL AIR	COOLED I	RECIP CH	ILLER							
	ELEC	0	0	0	0	7730	8519	9300	9820	7828	4992	0	0	48,189
	PK	0.0	0.0	0.0	0.0	34.7	37.8	41.0	40.9	37.0	33.2	0.0	0.0	41.0
7	EQ5001		CHI	LLED WATE	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	0	0	0	0	2753	2664	2753	2753	2664	2753	0	0	16,339
	PK	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	3.7
7	EQ5300		CON	TROL PANE	EL & INT	ERLOCKS								
	ELEC	0	0	0	0	744	720	744	744	720	744	0	0	4,416
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0
1	TYPFAN		GEN	ERIC FAN										
	ELEC	8076	7301	8493	7748	8284	8165	7867	8493	7748	8284	7748	7867	96,075
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
2	TYPFAN		GEN	ERIC FAN										
	ELEC	29154	26389	29421	28321	29288	28455	29154	29421	28321	29288	28054	29154	344,421
	PK	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
3	TYPFAN		GEN	ERIC FAN										
	ELEC	29423	26584	29940	28391	29682	28908	29165	29940	28391	29682	28391	29165	347,659
	PK	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7
4	TYPFAN		GEN	ERIC FAN										
	ELEC	29423	26584	29940	28391	29682	28908	29165	29940	28391	29682	28391	29165	347,659
	PK	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7
5	TYPFAN		GEN	ERIC FAN										
	ELEC	952	860	1001	913	976	962	927	1001	913	976	913	927	11,322
	PK	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
6	TYPFAN	٠	GEN	ERIC FAN										
	ELEC	3732	3312	3702	3447	3717	3567	3597	3702	3447	3717	3747	3597	43,284
	PK	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
7	TYPFAN		GEN	ERIC FAN										
	ELEC	1637	1478	1637	1584	1637	1584	1637	1637	1584	1637	1584	1637	19,272
	PK	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
8	TYPFAN		GEN	ERIC FAN										
	ELEC	2876	2601	3128	2926	3137	3102	3086	3274	2938	3092	2839	2800	35,799
	PK	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4

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EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2 ECO M - WATERSIDE SYSTEMS

------ EQUIPMENT ENERGY CONSUMPTION -----Ref Equip ------ Monthly Consumption -----Num Code Mar Apr May June July Aug Sep Oct Total 9 TYPFAN GENERIC FAN ELEC 1287 1154 1456 1331 1310 1300 1311 1229 1420 1278 1318 1294 15,688 PK 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 10 TYPFAN GENERIC FAN ELEC 1287 1154 1456 1331 1310 1300 1311 1420 1229 1278 1318 1294 15,688 PK 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 11 TYPFAN GENERIC FAN ELEC 2786 2563 3218 2995 3119 3159 3054 3278 3031 3084 2727 2801 35,815 PK 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9 14.9 12 TYPFAN GENERIC FAN ELEC 2489 3191 2911 2828 3034 2943 2867 3081 2747 2773 2894 2690 34,449 ÞΚ 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11.9 13 TYPFAN GENERIC FAN ELEC 140 126 157 149 146 149 146 156 139 140 144 136 1,728 PK 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 1 BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE GAS 8286 8394 2476 1260 0 0 0 0 0 0 2213 7877 30,506 PK 30.0 30.0 21.8 1.8 0.0 0.0 0.0 0.0 0.0 0.0 30.0 30.0 1 E05020 HEATING WATER CIRCULATION PUMP ELEC 8333 7526 8333 8064 0 0 0 0 0 0 48,653 PK 11.2 11.2 11.2 11.2 0.0 0.0 0.0 0.0 0.0 0.0 11.2 1 EQ5311 BOILER CONTROLS ELEC 93 93 90 0 0 0 0 0 0 90 93 543 PK 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 1 EQ5013 WATER CIRCULATING PUMP - CONSTANT VOLUME ELEC 417 376 417 403 0 0 0 0 0 403 417 2.433 0 PK 0.6 0.6 0.6 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.6 0.6 0.6 2 BLR2MOD WATERTUBE BOILER WITH HIGH-LOW FIRE GAS 192 148 0 0 0 0 0 0 0 0 0 141 480 PK 24.2 25.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 23.6 25.0 2 EQ5020 HEATING WATER CIRCULATION PUMP ELEC 0 0 0 0 224 90 0 0 0 0 0 67

				Е Q	UIPM	ENT	ENER	G Y C	оиѕи	мрті	0 N			
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	1	1	0	0,	0	0	0	0	0	0	0	1	3
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
2	EQ5013		WATE	R CIRCUL	ATING PU	MP - CON	STANT VO	LUME						
	ELEC	4	6	0	0	0	0	0	0	0	0	0	3	13
	PK	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
3	BLR2MOD		WATE	RTUBE BO	ILER WIT	H HIGH-I	OW FIRE							
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5311		BOII	ER CONTR	OLS									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	EQ5013		WATE	ER CIRCUI	ATING PU	MP - CON	ISTANT VO	LUME						
	ELEC	0	2	0	0	0	0	0	0	0	0	0	0	2
	PK	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
4			WATE	ERTUBE BO	ILER									
•	GAS	512	569	213	165	0	0	0	0	0	0	226	575	2,260
	PK	5.6	6.2	2.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	6.2	6.2
4	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	1116	1008	1116	1080	0	0	0	0	0	0	1080	1116	6,516
	PK	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5
4	EQ5311		BOII	LER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	543
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
5			WATE	ERTUBE BO	ILER									
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	EQ5020		неат	TING WATE	R CIRCUL	ATION P	JMP							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	. 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

_														
	Equip Code	Jan					_	sumption						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
5	EQ5311		BOIL	ER CONTR	ols									
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
5	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	ЛМР							
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
6			STEA	M BOILER										
	GAS	210	191	112	108	0	0	0	0	0	0	111	206	93
	PK	2.0	2.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.0	2
6	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	54
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0
7			WATE	RTUBE BO	ILER									
	GAS	246	227	92	89	0	0	0	0	0	0	93	239	9
	PK	4.2	4.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.4	4.2	4
7	EQ5020		HEAT	ING WATE	R CIRCUL	ATION P	JMP							
	ELEC	78	71	74	72	0	0	0	0	0	0	72	79	4
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0
7	EQ5311		BOII	ER CONTR	OLS									
	ELEC	49	45	47	45	0	0	0	0	0	0	45	50	2
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0
7	EQ5020		HEAT	TING WATE	R CIRCUL	ATION P	UMP							
	ELEC	223	202	223	216	0	0	0	0	0	0	216	223	1,3
	PK	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0
8			WATE	ERTUBE BO	ILER									
	GAS	956	1010	547	272	0	0	0	0	0	0	466	1023	4,2
	ЬК	7.5	7.5	5.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	5.6	7.5	7
8	EQ5020		HEAT	ring wate	R CIRCUL	ATION P	UMP							
	ELEC	1637	1478	1637	1584	0	0	0	0	0	0	1584	1637	9,5
	PK	2.2	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2
8	EQ5311		BOII	LER CONTR	OLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	5
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0

Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota:
9			WATE	RTUBE BO	ILER									
	GAS	11	16	0	0	0	0	0	0	0	0	0	14	4:
	PK	1.6	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.
9	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	MP							
	ELEC	18	20	0	. 0	0	0	0	0	0	0	0	13	5:
	PK	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.:
9	EQ5311		BOIL	ER CONTR	OLS									
	ELEC	1	1	0	0	0	0	0	0	0	0	0	1	3
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.:
10			WATE	RTUBE BO	ILER									
	GAS	145	137	66	57	0	0	0	0	0	0	67	143	616
	PK	2.6	2.6	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.6	2.
10	EQ5020		HEAT	ING WATE	R CIRCUL	ATION PU	МР							
	ELEC	1443	1358	1376	1332	0	0	0	0	0	0	1332	1439	8,281
	PK	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	3.7	3.
10	EQ5311		BOIL	ER CONTR	OLS									
	ELEC.	49	46	47	45	0	. 0	0	0	0	0	45	49	280
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

				E (UIP	MENT	ENE	RGY	const	JMPT	I O N			
Ref	Equip	********		*		Mon	thly Con	sumption						
	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	102756	92885	108274	98504	105515	104064	99955	108274	98504	105515	98587	99955	1,222,789
	PK	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD				•									
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	. 0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1			BAS	SE UTILIT	Y									
	CHILLD	0	0	0	0	28867	27936	28867	28867	27936	28867	0	0	171,341
	PK	0.0	0.0	0.0	0.0	38.8	38.8	38.8	38.8	38.8	38.8	0.0	0.0	38.8
2				SE UTILIT	Y									
	CHILLD	3571	3226	3571	3456	0	0	0	0	0	0	3456	3571	20,851
	PK	4.8	4.8	4.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	4.8
1	EQ1008S			STG CENTR	IFUGAL «	: 300 TO	IS							
	ELEC	5095	4367	7061	10390	19191	20332	27602	26664	23124	31637	6666	5033	187,162
	PK	25.9	24.6	31.3	41.7	145.9	148.3	152.7	154.6	150.3	130.0	31.1	25.8	154.6
1	EQ5100		cod	OLING TOW	er fans									
	ELEC	0	0	1876	8291	6064	4857	5736	5871	5886	5325	3080	0	46,986
	PK	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	0.0	14.9

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				E Ç	UIPI	MENT	ENE	RGY	CONS	UMPT	I O N			
Ref	Equip													
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	0ct	Nov	Dec	Total
1	EQ5100		C001	LING TOWE	ER FANS									
	WATER	24	20	33	46	132	143	192	185	158	227	31	23	1,213
	PK	0.1	0.1	0.2	0.3	1.0	1.0	1.0	1.0	1.0	1.0	0.2	0.1	1.0
_														
1	EQ5001			LLED WATE			ANT VOLU							
	ELEC	18476	16688	22171	21456	12129	9715	11473	11741	11771	19698	21456	19400	196,173
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
1	EQ5010		CON	DENSER W	ATER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	9238	8344	11086	10728	6064	4857	5736	5871	5886	9849	10728	9700	98,087
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
1	EQ5300		CON	TROL PANS	EL & INT	ERLOCKS								
	ELEC	620	560	744	720	407	326	385	394	395	661	720	651	6,583
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
•	701000		2 2				_							
2	EQ1008L			TG CENTR:										
	ELEC PK	0	0	0	0			126646	133974	90729	11379	0	0	540,670
	PK	0.0	0.0	0.0	0.0	284.6	288.9	297.6	301.2	292.8	261.2	0.0	0.0	301.2
2	EQ5100		C00	LING TOW	er fans									
	ELEC	0	0	0	. 0	7087	8556	9691	10081	7533	1544	0	0	44,491
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
2	EQ5100		COO	LING TOW	er fans									
	WATER	0	0	0	0	566	745	902	943	656	95	0	0	3,907
	PK	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0
2	EQ5001		СНТ	LLED WAT	ER PIIMP	- CONST	ANT VOLU	IME.						
	ELEC	0	0	0	0	11354	13708	15526	16152	12069	2473	0	0	71,282
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5010		CON	DENSER W	אוזכו פושיא	ם מייי	u ceeto	,						
	ELEC	0	0	DENSER W	0 0	11354	13708	15526	16152	12069	2473	0	•	71 202
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0	71,282
	- **	, , 0.0	0.0	5.0	0.0	23.0	23.0	23.0	23.0	23.0	23.8	0.0	0.0	29.8
2	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	0	0	0	0	381	460	521	542	405	83	0	0	2,392
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 4 ECO N2 - WATERSIDE SYSTEMS

lef	Equip					Mon	thly Con	sumption						
fum	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tota
0	LIGHTS													
	ELEC	102756	92885	108274	98504	105515	104064	99955	108274	98504	105515	98587	99955	1,222,78
	PK	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
5	MISC LD			•										
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
1		_		E UTILITY										
	CHILLD	0	0	0	0	28867	27936	28867	28867	27936	28867	0	0	171,3
	PK	0.0	0.0	0.0	0.0	38.8	38.8	38.8	38.8	38.8	38.8	0.0	0.0	38
2	<i>-</i>			E UTILITY										
	CHILLD PK	3571	3226	3571	3456	0	0	0	0	0	0	3456	3571	20,8
	PK	4.8	4.8	4.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	4
1	EQ1009			TG CTV W										
	ELEC	1583	1272	2767	5499	17583	18928			21129	31839	2472	1456	154,7
	PK	21.8	20.3	28.6	36.7	154.0	154.0	154.0	154.9	154.0	153.7	28.3	21.8	154
1	EQ5100		coo	LING TOWE	R FANS									
	ELEC	0	0	0	0	420	656	1216	1337	672	700	0	0	5,0
	PK	0.0	0.0	0.0	0.0	10.9	11.8	13.5	14.9	12.6	11.5	0.0	0.0	14

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE ${\bf 4}$

ECO N2 - WATERSIDE SYSTEMS

				E (UIPI	MENT	ENE	RGY	CONSI	UMPT	I O N			
Ref	Equip					Mon	thlv Con	sumption			*****			
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		C001	LING TOWE	R FANS									
	WATER	20	17	29	42	130	142	190	183	156	227	27	20	1,183
	PK	0.1	0.1	0.2	0.3	1.0	1.0	1.0	1.0	1.0	1.0	0.2	0.1	1.0
1	EQ5001		CHI	LLED WATE	R PUMP	- CONST	'ANT VOLU	ME						
	ELEC	18476	16688	22171	21456	12129	9715	11473	11741	11771	19698	21456	19400	196,173
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
1	EQ5010		CONT	DENSER WA	ATER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	9238	8344	11086	10728	6064	4857	5736	5871	5886	9849	10728	9700	98,087
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
1	EQ5300		CON	TROL PANI	EL & INT	ERLOCKS								
	ELEC	620	560	744	720	407	326	385	394	395	661	720	651	6,583
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	EQ1009		3-S	TG CTV W	TH VARI	ABLE FRE	QUENCY D	RV						
	ELEC	0	0	0	0	75826	102434	126975	133133	89633	12170	0	0	540,171
	PK	0.0	0.0	0.0	0.0	300.0	300.0	300.0	301.7	300.0	300.0	0.0	0.0	301.7
2	EQ5100		C00	LING TOW	ER FANS									
	ELEC	0	0	0	0	2914	4598	6406	7185	4432	101	0	0	25,637
	PK	0.0	0.0	0.0	0.0	13.6	14.7	16.9	18.6	15.7	11.8	0.0	0.0	18.6
2	EQ5100		C00	LING TOW	er fans									
	WATER	0	0	0	0	566	745	903	942	655	96	0	0	3,907
	PK	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0
2	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	TANT VOLU	ME						
	ELEC	0	0	0	0	11354	13708	15526	16152	12069	2473	0	0	71,282
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5010		CON	DENSER W	ATER PUM	P-CV(HIC	SH EFFIC.)						
	ELEC	0	0	0	0	11354	13708	15526	16152	12069	2473	0	0	71,282
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	0	0	0	0	381	460	521	542	405	83	0	0	2,392
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

------ EQUIPMENT ENERGY CONSUMPTION-----

ef	Equip				·	Mon	thly Con	sumption						
um	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
0	LIGHTS													
	ELEC	102756	92885	108274	98504	105515	104064	99955	108274	98504	105515	98587	99955	1,222,789
	PK	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	0
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	c
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	C
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	(
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	(
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	(
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
1				SE UTILIT										
	CHILLD	0	0	0	0	28867	27936	28867	28867	27936	28867	0	0	171,34
	PK	0.0	0.0	0.0	0.0	38.8	38.8	38.8	38.8	38.8	38.8	0.0	0.0	38.
2				SE UTILIT										
	CHILLD	3571	3226	3571	3456	0	0	0	0	0	0	3456	3571	20,85
	PK	4.8	4.8	4.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	4.
1	YSCRW22			RK W.C. S										
	ELEC	2539	2040	4446	9354	19969	20420	27930	26505	23826	34551	3991	2335	177,90
	PK	31.8	30.8	35.8	41.7	159.0	161.4	165.7	167.0	163.3	143.3	35.9	31.8	167.
1	EQ5100			OLING TOW										
	ELEC	0	0	1836	8252	6064	4857	5736	5871	5886	5367	3050	0	46,92
	PK	0.0	0.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	0.2	14.

				E (UIPI	4 E N T	ENE	RGY	CONS	UMPTI	ON			·
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		C001	LING TOW	ER FANS									
	WATER	21	18	30	45	132	143	192	184	158	230	28	21	1,204
	PK	0.1	0.1	0.2	0.3	1.0	1.0	1.0	1.0	1.0	1.0	0.2	0.1	1.0
1	EQ5001			LLED WATI	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	18476	16688	22171	21456	12129	9715	11473	11741	11771	19698	21456	19400	196,173
	PK	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
1	EQ5011		CONI	DENSER W	ATER PUM	P-CV (MED	IUM EFFI	C.)						
	ELEC	9238	8344	11086	10728	6064	4857	5736	5871	5886	9849	10728	9700	98,087
	PK	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
1	EQ5300		CON	TROL PAN	et. & TNT'	ERT-OCKS								
_	ELEC	620	560	744	720	407	326	385	394	395	661	720	651	6,583
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
														2.0
2	YSCRW22		YOR	K W.C. S	CREW CHI	LLER								
	ELEC	0	0	0	0	83875	115385	144525	152851	102274	11933	0	0	610,843
	PK	0.0	0.0	0.0	0.0	332.6	337.2	346.2	349.0	341.2	308.3	0.0	0.0	349.0
2	EQ5100	•	C00:	LING TOW	er fans									
	ELEC	0	0	0	0	7087	8556	9691	10081	7533	1544	0	0	44,491
	PK	0.0	0.0	0.0	0.0	18.6	18.6	18.6	18.6	18.6	18.6	0.0	0.0	18.6
2	EQ5100		COO	LING TOW	PD PANC									
4	WATER	0	0	0	0	573	757	918	960	667	95	0	0	3,971
	PK	0.0	0.0	0.0	0.0	2.0	2.1	2.1	2.1	2.1	2.0	0.0	.0 0.0	2.1
2	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	TANT VOLU	ME						
	ELEC	0	0	0	0	11354	13708	15526	16152	12069	2473	0	0	71,282
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5011		CON	DENSER W	ATER PUM	P-CV (MEI	OIUM EFFI	.c.)						
	ELEC	0	0	0	0	11354	13708	15526	16152	12069	2473	0	0	71,282
	PK	0.0	0.0	0.0	0.0	29.8	29.8	29.8	29.8	29.8	29.8	0.0	0.0	29.8
2	EQ5300		CONT	TROL PAN	PT C. TNM	EDI OCKO								
2	ELEC	0	0	TROL PAN	0 FP % 1M1	381	460	521	E40	405	0.7	^	^	2 222
	PK	0.0	0.0	0.0	0.0	1.0	1.0	1.0	542 1.0	405 1.0	83 1.0	0	0	2,392
	110	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0

------ EQUIPMENT ENERGY CONSUMPTION-----Ref Equip ----- Monthly Consumption -----Num Code Jan Feb Mar Apr May June July Sep Oct Aug Nov Dec Total 0 LIGHTS ELEC 102756 92885 108274 98504 105515 104064 99955 108274 98504 105515 98587 99955 1,222,789 PΚ 587.8 587.8 587.8 587.8 587.8 587.8 587.8 587.8 587.8 587.8 587.8 587.8 587.8 1 MISC LD ELEC 0 0 0 0 0 0 0 0 0 0 0 n 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2 MISC LD GAS 0 0 0 n 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 3 MISC LD OIL 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4 MISC LD P STEAM 0 0 0 0 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 5 MISC LD P HOTH20 0 0 a n 0 0 0 0 0 0 0 0 0 PK 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6 MISC LD P CHILL 0 0 0 0 0 0 0 0 0 0 0 O ٥ PΚ 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 BASE UTILITY CHILLD 0 0 0 0 28867 27936 28867 28867 27936 28867 0 0 171.341 PK 0.0 0.0 0.0 0.0 38.8 38.8 38.8 38.8 38.8 38.8 0.0 0.0 38.8 BASE UTILITY CHILLD 3571 3226 3571 3456 0 0 0 0 0 0 3456 3571 20,851 PK 4.8 4.8 4.8 4.8 0.0 0.0 0.0 0.0 0.0 0.0 4.8 4.8 4.8 ENGINE DRIVEN CHILLER, 80 TONS GAS 124 103 211 409 12546 14469 16920 18051 13962 193 116 82,288 PК 1.2 1.5 3.1 6.2 51.5 52.1 53.4 53.9 52.7 32.3 3.0 1.8 53.9 1 EQ5100 COOLING TOWER FANS ELEC 0 1292 13874 27677 26784 27677 27677 26784 12724 3200 0 167,687 PK 0.0 0.0 37.2 37.2 37.2 37.2 37.2 37.2 37.2 37.2 37.2 0.0 37.2

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 2

ECO N4 - WATERSIDE SYSTEMS

				E (UIPI	MENT	ENEI	RGY (CONS	UMPT	I O N			
Ref	Equip					Mon	thly Con	sumption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1	EQ5100		C00	LING TOW	ER FANS									
	WATER	22	19	34	51	1114	1284	1481	1570	1222	406	31	21	7,254
	PK	0.1	0.2	0.3	0.4	4.0	4.0	4.0	4.0	4.0	3.0	0.3	0.2	4.0
1	EQ5001		CHI	LLED WAT	ER PUMP	- CONST	ANT VOLU	ME						
	ELEC	12471	10728	16762	20160	33257	32184	33257	33257	32184	33257	15913	11845	285,276
	PK	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7
1	EQ5010		CON	DENSER W	ATER PUM	P-CV(HIG	H EFFIC.)						
	ELEC	12471	10728	16762	20160	33257	32184	33257	33257	32184	33257	15913	11845	285,276
	PK	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7
1	EQ5300		CON	TROL PAN	EL & INT	ERLOCKS								
	ELEC	279	240	375	451	744	720	744	744	720	744	356	265	6,382
	PK	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1			HEA	TER FOR	ENGINE D	RIVEN CH	ILLER							
	ELEC	70	65	55	40	0	0	0	0	0	0	55	72	357
	PK	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3

ECO O - WATERSIDE SYSTEMS

f	Equip					Mon	thly Con	sumption						
m	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot
0	LIGHTS													
	ELEC	102756	92885	108274	98504	105515	104064	99955	108274	98504	105515	98587	99955	1,222,
	PK	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	587.8	58
1	MISC LD													
	ELEC	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
!	MISC LD													
	GAS	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1	MISC LD													
	OIL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	P STEAM	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
,	MISC LD													
	P HOTH20	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	MISC LD													
	P CHILL	0	0	0	0	0	0	0	0	0	0	0	0	
	PK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
				E UTILIT	Y									
	HOTLD	1472	1329	1472	1424	0	0	0	0	0	0	1424	1472	8 ,
	PK	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	
		•		H EFFICI	ENCY MOI	ULAR FIF	ETUBE BO	IL.						
	GAS	7423	7363	3053	1786	0	0	0	0	0	0	2960	6995	29
	PK	20.0	20.0	8.6	4.4	0.0	0.0	0.0	0.0	0.0	0.0	9.2	20.0	:
	EQ5020			TING WAT										
	ELEC	8333	7526	8333	8064	0	0	0	0	0	0	8064	8333	48
	PK	11.2	11.2	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2	:
	EQ5311		вот	LER CONT	ROLS									
	ELEC	93	84	93	90	0	0	0	0	0	0	90	93	
	PK	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	

PK

0.1

0.1 0.0 0.0 0.0 0.0

EQUIPMENT ENERGY CONSUMPTION - ALTERNATIVE 3 ECO O - WATERSIDE SYSTEMS

				E Q	UIPM	ENT	ENER	G Y C	onsu	MPTI	O N		*	
Ref	Equip					Mont	hly Cons	umption						
Num	Code	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
2		HIGH EFFICIENCY MODULAR FIRETUBE BOIL.												
	GAS	1340	1332	0	0	0	0	0	0	0	0	0	977	3,649
	PK	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0
2	EQ5020	HEATING WATER CIRCULATION PUMP												
	ELEC	1165	1086	0	0	0	0	0	0	0	0	0	997	3,248
	PK	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2
2	EQ5311	BOILER CONTROLS												
	ELEC	13	12	0	0	0	0	0	0	0	0	0	11	36
	PK	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
3		HIGH EFFICIENCY MODULAR FIRETUBE BOIL.												
	GAS	24	51	0	0	0	0	0	0	0	0	0	3	78
	PK	1.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.7
	EQ5020	HEATING WATER CIRCULATION PUMP												
	ELEC	246	291	0	0	0	0	0	0	0	0	0	67	605
	PK	11.2	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2
3	EQ5311	BOILER CONTROLS												
	ELEC	3	3	0	0	0	0	0	0	0	0	0	1	7

0.0 0.0 0.0 0.0

0.0

0.1

0.1